



(30,166)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1924

No. 307

CONCRETE APPLIANCES COMPANY AND WILLIAM H.
INSLEY, PETITIONERS,

vs.

JOHN E. GOMERY, JOHN C. SCHWARTZ, MICHAEL J.
O'MEARA, ET AL.

ON A WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT
COURT OF APPEALS FOR THE THIRD CIRCUIT

INDEX

Original Print

Record from the district court of the United States, eastern district of Pennsylvania.....	1	1
Docket entries.....	1	1
Bill of complaint.....	10	5
Answer.....	16	9
Stipulation for amendment to answer.....	23	13
Amendment to answer.....	24	13
Defendants' interrogatories to plaintiffs.....	30	17
Plaintiffs' answer to interrogatories.....	31	18
Defendants' additional interrogatories to plaintiffs.....	32	18
Plaintiffs' answer to additional interrogatories.....	33	19
Testimony of Charles Cooper.....	36	20
William T. Baker.....	45	25
Walter Newsom Thornton.....	56	31
Roland Brinkley.....	67	37

INDEX

	Original	Print
Testimony of F. M. Glines.....	69	39
Carter Gay.....	78	43
Andrew J. Kerns.....	83	46
J. Samuel Goldback.....	103	58
Lee Callahan.....	119	67
Edward Anderson.....	186	104
Hooper O. Anderson.....	191	107
Stipulation re testimony of W. B. Ittner, P. J. Curran, and R. M. Milligan.....	196	100
Testimony of Edgar H. Thompson.....	200	112
W. H. Insley.....	211	118
Fount M. Woodward.....	1	131
Andrew W. Woodman.....	12	138
Leopold J. Mensch.....	23	144
William R. Sinks.....	45	157
Henry O. Webb.....	80	178
William T. McCann.....	94	188
Alexander Cameron.....	109	196
Arthur L. Smith.....	141	216
Robert B. Preston.....	177	238
Townsend A. Tatterson.....	195	249
Albert E. Culp.....	229	270
Stipulation re testimony of Charles H. Longley.....	235	273
Stipulation re testimony of George Botsung.....	247	281
Testimony of Jerome C. Alderman.....	247	281
Stipulation re testimony of A. L. Newman.....	277	299
Testimony of Stephan Creutz, Jr.....	278	300
Testimony of Alexander C. Patterson.....	309	319
Stipulation re testimony of E. L. Moe.....	312	321
Testimony of Carl T. Anderson.....	313	321
George W. Herthel.....	329	331
Edward C. Gerhard.....	335	335
Samuel C. Black.....	356	348
F. C. Bonsack.....	370	357
Herman A. Bankes.....	374	359
James L. Hopkins.....	388	369
John W. Goebel.....	394	372
Stipulation re testimony of D. G. Scott.....	415	385
Stipulation re testimony of Eugene Taylor.....	415	385
Testimony of Wilbur B. Jones.....	416	386
Lewis A. Stinson.....	417	387
Howard C. Blake.....	444	403
Harold D. Squires.....	461	413
Hugh W. Bryson.....	479	425
L. A. Parker.....	518	448
Arthur H. Bannister.....	537	460
Stipulation re testimony of Walter Cahill.....	554	470
Testimony of Edward J. Fulick.....	555	471
Russell H. Folwell.....	567	478
Robert H. Hughes.....	580	486

INDEX

iii

	Original	Print
Testimony of William G. Fargo.....	593	494
Stipulation re testimony of Horace S. Hunt.....	602	500
Testimony of Theodore Emtman.....	604	501
Kurt O. Wetzel.....	624	514
Luther M. Hill.....	630	518
Swan P. Johnson.....	641	524
Charles C. Horton.....	645	527
Martin E. Brown.....	657	534
Fred L. Ayer.....	680	548
Stipulation re testimony of Edward C. Gerhard.....	693	556
Stipulation re exhibits.....	693	556
Notice to take testimony.....	1	558
Testimony of Charles W. Ellis.....	2	559
John R. Williams.....	20	570
Fred Bruner.....	28	575
Frank I. Ginsberg.....	41	582
Frederick E. Engstrum.....	49	588
W. H. Insley.....	60	594
H. M. Kebby.....	65	597
Robert Tibbitts.....	81	607
Charles C. Horton.....	92	613
Fred L. Ayer.....	110	624
Notarial certificate.....	125	634
Plaintiffs' Exhibit N—Drawings of patent in suit and specification of letters patent.....	127	635
Defendants' Exhibit 36—Amendment to preliminary statement of Arthur L. Smith and certificate thereto.....	139	635
Defendants' Exhibit 38—Drawing of gallery along new wharf	145	638
Defendants' Exhibit 39—Drawing of outer end of wharf galleries and end dock spouts.....	147	638
Defendants' Exhibit 63—Preliminary statement of Arthur L. Smith and certificate thereto.....	149	638
Preliminary statement of Lee Callahan.....	153	641
Preliminary statement of Theodore Emtman.....	154	642
Preliminary statement of Lee Callahan.....	158	644
Defendants' Exhibit 67—Drawings of A. L. Smith patent, device for distributing concrete, and specification of letters patent.....	161	645
Defendants' Exhibit 68—Letters patent of Theodore Emtman and certificate thereto.....	169	645
Opinion, Dickinson, J., sur trial hearing on bill.....	177	645
Opinion, Dickinson, J., sur reargument.....	186	650
Supplemental finding, Dickinson, J.....	188	652
Decree	190	653
Bill of costs.....(omitted in printing)	191	654
Exceptions to taxation of bill of costs.....	197	657
Opinion, Dickinson, J., sur exceptions to taxation of bill of costs	198	657
Order on exceptions to taxation of bill of costs.....	200	658

INDEX

	Original	Print
Stipulation re payment of costs.....	201	650
Petition for and order allowing appeal.....	203	660
Assignment of errors.....	204	661
Præcipe for transcript of record.....	205	661
Clerk's certificate.....	207	662
Defendants' Exhibit 66—U. S. patent No. 69,375 to Voorhis.	212	666
U. S. Patent No. 243,327 to Toepfer.	216	668
U. S. patent No. 366,468 to Edwards & Kelly.....	220	670
U. S. patent No. 371,343 to McLennan	228	675
U. S. patent No. 426,301 to Musgrove & Clarke.....	238	681
U. S. patent No. 445,645 to Simpson	244	684
U. S. patent No. 464,101 to Mayo..	250	688
U. S. patent No. 524,984 to Robinson	258	693
U. S. patent No. 556,371 to Rasch..	264	697
U. S. patent No. 560,382 to Walsh..	278	705
U. S. patent No. 582,508 to Bird..	282	707
U. S. patent No. 605,375 to Bellinger	286	710
U. S. patent No. 622,019 to Robinson	292	714
U. S. patent No. 667,335 to Record.	302	720
U. S. patent No. 681,378 to Shoemaker & Willson.....	310	725
U. S. patent No. 694,579 to Ransome	328	735
U. S. patent No. 702,372 to Montgomery	332	737
U. S. patent No. 714,150 to Clarke.	338	742
U. S. patent No. 718,092 to Clarke.	426	798
U. S. patent No. 721,215 to Metzger	436	804
U. S. patent No. 753,616 to Nicholson	440	807
U. S. patent No. 760,015 to Parker.	446	811
U. S. patent No. 769,126 to Adams.	454	816
U. S. patent No. 830,385 to Wallace.	462	821
U. S. patent No. 862,874 to Beach..	470	826
U. S. patent No. 866,166 to Theiss, Whann & Englisbee.....	480	832
U. S. patent No. 875,529 to Joehnck	492	840
U. S. patent No. 939,072 to Ney...	502	846
U. S. patent No. 948,723 to Emtman	506	849
U. S. patent No. 969,172 to Lonney.	510	852
British patent No. 1124 of 1864 to Potter	541	872

INDEX

v

	Original	Print
Defendants' Exhibit 66—British patent No. 3107 of 1872 to Ellington & Anderson.....	555	885
British patent No. 2017 of 1880 to Johnson	563	802
British patent No. 10,380 of 1888 to Ballie	573	809
British patent No. 16,525 of 1895 to Roe	583	906
British patent No. 19,554 of 1903 to Holland	605	923
British patent No. 7307 of 1908 to Gibb	609	925
Proceedings in United States circuit court of appeals for third circuit	621	933
Opinion, Buffington, J.....	621	933
Decree	634	940
Order modifying decree.....	634	940
Clerk's certificate.....	636	941
Order granting petition for certiorari.....	637	942



[fol. 1] IN UNITED STATES DISTRICT COURT FOR THE
**EASTERN DISTRICT OF PENNSYLVANIA, JUNE TERM,
 1920**

No. 2067

CONCRETE APPLIANCES COMPANY and WILLIAM H. INSLEY

v.

**JOHN E. GOMERY, JOHN C. SCHWARTZ, MICHAEL J. O'MEARA, and
 CONCRETE CONSTRUCTION COMPANY**

Hood & Schley, Cyrus N. Anderson.
 Sheridan, Jones & Smith, Wm. Steell Jackson.

DOCKET ENTRIES

- July 19, 1920. Bill of Complaint filed.
 " " " Subpœna exit—returnable August 9, 1920.
 " 20, " Appearance of Sheridan, Jones, Sheridan & Smith
 and William Steell Jackson for defendant filed.
 " 26, " Motion for Preliminary Injunction filed.
 " " " Affidavit of Henry I. Peirce in support of motion for
 Preliminary Injunction filed.
 " " " Affidavit of Wm. H. Insley in support of motion
 for Preliminary Injunction filed.
 [fol. 2] Order of Court fixing August 2, 1920, as time for
 filing Deft's Affidavits; August 5, 1920 for plain-
 tiff's rebuttal affidavits; and August 6, 1920, for
 hearing on motion for preliminary injunction
 filed.
 July 29, 1920. Justification of Surety filed.
 " " " Bond for Costs in \$250, with Fidelity and Casualty
 Company of New York Surety filed.
 " " " Order of Court approving Bond for Costs filed.
 " 31, " Printed copy of Bill of Complaint filed.
 Aug. 3, 1920. Stipulation of counsel extending time in which to
 file affidavits filed.
 " 3, " Order of Court approving Stipulation of counsel
 filed.
 " 6, " Subpœna returned; July 22, 1920 served as to each
 defendant and filed.
 " 9, " Certified copy page 97—July 30, 1903 issue of Engi-
 neering News filed.
 " " " Certified copy of Arthur L. Smith—Preliminary
 statement in Patent Office Interference 30533
 filed.
 " " " Certified copy of preliminary statement of Lee
 Callahan—Patent Office Interference 30533 filed.

- Aug. 9, 1920. Copy of Preliminary Statement of Theodore Emtman—Patent Office Interference 30533 filed.
- “ “ “ Affidavit of Arthur L. Smith filed.
 “ “ “ Affidavit of George Botzung filed.
 “ “ “ Affidavit of Albert E. Culp filed.
 “ “ “ Affidavit of John S. Bronson filed.
 “ “ “ Affidavit of George B. Jones filed.
 “ “ “ Affidavit of Herman A. Bankus filed.
- [fol. 3]
- Aug. 9, 1920. Affidavit of Edward C. Gerhard filed.
 “ “ “ Affidavit of Clarence E. Miller filed.
 “ “ “ Affidavit of Eugene Taylor filed.
 “ “ “ Affidavit of Edwin M. Prettyman filed.
 “ “ “ Affidavit of John C. Schwartz filed.
 “ “ “ Certified copy of record on appeal, Briefs for Appellants and appellees in case of Concrete Appliances Co. et al. vs. Meinken from Court of Appeals Sixth Circuit filed.
 “ “ “ Copy of Preliminary Statement of Theodore Emtman Patent Office Interference 30618 filed.
 “ “ “ Copy of Preliminary Statement of Lee Callahan, Patent Office Interference 30618 filed.
 “ 10, “ Affidavit of Louis C. Masten in opposition to Motion for Preliminary Injunction filed.
 “ 10, “ Affidavit of George B. Jones in opposition to Motion for Preliminary Injunction filed.
 “ 11, “ Affidavit of W. L. Winimer in opposition to Motion for Preliminary Injunction filed.
 “ 11, “ Affidavit of John Walter Goebel in opposition to Motion for Preliminary Injunction filed.
 “ 25, “ Stipulation to extend time for filing answer filed.
 “ “ “ Order of court extending time for filing answer to August 30, 1920 filed.
- Sept. 20, 1920. Answer filed.
 “ 25, “ Stipulation of counsel for amendment to answer filed.
- [fol. 4]
- Sept. 25, 1920. Defendants Interrogatories filed.
 “ 25, “ Acceptance of Service of copy of defendant's Interrogatories filed.
- Oct. 9, 1920. Printed copy of Answer filed.
 “ 11, “ Answers to defendants' Interrogatories filed.
 “ 15, “ Defendants' Interrogatories filed.
 “ “ “ Acknowledgment of Service of Copy of Interrogatories filed.
- Nov. 8, 1920. Rebuttal Affidavit of Henry T. Peirce filed.
 “ “ “ Rebuttal Affidavit of William T. Baker filed.
 “ “ “ Rebuttal Affidavit of J. Samuel Goldback filed.
 “ “ “ Rebuttal Affidavit of William H. Insley filed.
 “ “ “ Rebuttal affidavit of Roland Bunkley filed.
 “ “ “ Rebuttal affidavit of Andrew J. Kearns filed.

- Nov. 8, 1920. Additional affidavit of Andrew J. Kearns filed.
" " " Rebuttal Affidavit of Walter Newson Thornton filed.
" 12, " Rebuttal Affidavit of H. W. Bryson and Lee Callahan filed.
" " " Affidavit of Service by F. S. Lyon filed.
" 13, " Rebuttal Affidavit of Edward L. Mayberry filed.
" " " Affidavit as to Service filed.
" " " Notice of hearing of Motion for unqualified answer
[fol. 5] to defendant's Interrogatory filed.
- Nov. 8, 1920. Acknowledgment of service of Notice filed.
" " " Motion for unqualified answer to defendants' Interrogatory filed.
" " " Second affidavit of Edwin M. Prettyman filed.
" 15, " Argued sur Motion for Preliminary Injunction.
" 24, " Stipulation of counsel extending time in which to file bond filed.
- Dec. 1, 1920. Decree that upon filing proper bond, Motion for Preliminary Injunction be dismissed, filed.
" " " Bond in \$10,000 with American Surety Company of New York, surety filed.
" " " Order of Court approving Bond filed.
" 23, " Defendants' additional Interrogatories filed.
" 23, " Decree that additional Interrogatories be answered within ten days, filed.
- Jan. 8, 1921. Plaintiffs' answer to Interrogatory No. 1 filed.
May 18, 1921. Argued sur defendants' Motion to take additional testimony.
" 18, " Decree granting leave to defendants to take depositions de bene esse filed.
" " " Deposition of George Bayard Jones filed.
- Oct. 3, 1921. Deposition of Lewis A. Stinson on behalf of defendants filed.
" " " Deposition of A. E. Culp on behalf of defendants filed.
[fol. 6]
- Oct. 3, 1921. Affidavit of J. C. Black on behalf of defendants filed.
" " " Deposition of J. W. Goebel on behalf of defendants filed.
" " " Deposition of H. A. Banks on behalf of defendants filed.
" " " Deposition of G. W. Herthel on behalf of defendants filed.
" " " Deposition of J. L. Hopkins on behalf of defendants filed.
" " " Deposition of F. C. Bonsack on behalf of defendants filed.
" " " Deposition of W. B. Jones on behalf of defendants filed.
" " " Deposition of Wm. G. Fargo on behalf of defendants filed.

- Oct. 3, 1921. Deposition of Albert L. Smith on behalf of defendants filed.
" " " Deposition of Charles C. Horton on behalf of defendants filed.
" " " Depositions on behalf of W. E. Brown on behalf of defendants filed.
" " " Deposition of Fred Layer filed.
" " " Deposition of A. H. Bannister on behalf of defendants filed.
" " " Deposition of H. W. Bryson on behalf of defendants filed.
" " " Deposition of E. C. Gerhard on behalf of defendants filed.
" " " Deposition of J. C. Alderman on behalf of defendants filed.
" " " Deposition of Alexander Cameron on behalf of defendants filed.
" " " Depositions of F. M. Woodward, L. L. Mensels, and Wm. T. McCann on behalf of defendants filed.
[fol. 7]
- Oct. 3, 1921. Depositions of R. B. Preston, and T. A. Tatterson on behalf of defendants filed.
" " " Depositions of T. Emtman on behalf of defendants filed.
" " " Final Hearing and Witnesses sworn.
" 4, " Stipulation of Counsel as to testimony of E. C. Gerhard filed.
" " " Stipulation of Counsel as to Exhibits 52 and 64 filed.
" " " Stipulation of Counsel as to copies of Patents filed.
" " " Hearing resumed (Witnesses sworn).
" 5, " Printed copy of defendants' depositions filed.
- Nov. 28, 1921. Notice of Defendants' Motion for surrebuttal testimony filed.
" " " Defendants' Motion for sur-rebuttal testimony filed.
" " " Argued sur Motion to take sur-rebuttal evidence.
" " " Decree continuing Defendants' Motion to take sur-rebuttal testimony filed.
- Dec. 2, 1921. Deposition of Charles W. Ellis on behalf of defendants filed.
" 30, " Decree granting leave to take certain testimony filed.
- Feb. 9, 1922. Depositions of H. M. Kirby and Robert Tibitts on behalf of plaintiff filed.
" " " Depositions of Charles C. Horton and Fred L. Ayer on behalf of defendant filed.
" 22, " Plaintiffs Exhibits O. P. & I. filed.
- Apr. 15, 1922. Plaintiffs' withdrawal of objections to defendants' Exhibit 64 filed.
[fol. 8]
- Apr. 17, 1922. Defendants' Exhibit 2 (photograph A-B Canadian Suit) filed.

- Apr. 17, 1922. Defendants' Exhibit 21 (Ransome Concrete Machinery Co. 1906 catalogue) filed.
- June 13, 1922. Opinion—Dickinson, J. dismissing Bill of Complaint with costs to defendant filed.
- " 23, " Testimony filed.
- Oct. 23, 1922. Request for re-hearing filed.
- " 31, " Opinion Dickinson J. filed.
- Nov. 6, 1922. Supplemental Finding Dickinson J. filed.
- " 15, " Stipulation of Counsel releasing defendants from obligation under bond filed December 1, 1920 filed.
- " 20, " Decree dismissing Bill of Complaint at cost of plaintiff filed.
- Dec. 26, 1922. Defendants' Bill of Costs filed.
- " 26, " Bill of Costs taxed at \$2,329.59.
- " 28, " Exceptions to taxation of defendants' Bill of Costs filed.
- Jan. 17, 1923. Argued sur exceptions to defendants' Bill of Costs filed.
- " 19, " Opinion Dickinson J. reducing defendants' Bill of Costs to \$2,119.16 filed.
- " 22, " Decree in re exceptions to defendants' Bill of Costs and taxing Bill of Costs in \$2,119.16 filed.
- " 30, " Assignments of Error filed.
- " " Petition for Appeal filed.
- " " Order of Court granting prayer of Petition filed.
- " " Stipulation of counsel as to payment of costs filed.
- [fol. 9]
- Jan. 30, 1922. Praeclipe for transcript of record sur appeal filed.
- " " " Stipulation of Counsel as to certain exhibits to be incorporated in record sur appeal filed.
- Feb. 1, 1923. Copy of notice of appeal filed.
- " 8, " Defendants' Exhibit 19 filed.
- " 13, " Bond sur appeal in \$2,500 with Maryland Casualty Company surety—filed.
- " 13, " Decree approving Bond sur Appeal filed.
- " 13, " Citation allowed and issued.
- " 19, " Citation returned—service accepted and filed.

[fol.10] IN UNITED STATES DISTRICT COURT

[Title omitted]

BILL OF COMPLAINT—Filed July 19, 1920

To the Honorable the judges of the District Court of the United States in and for the Eastern District of Pennsylvania:

Concrete Appliances Company, a corporation duly organized under and in accordance with the laws of the State of California, and

having its principal office and place of business in the City of Los Angeles, State of California, and a citizen of said State, and William H. Insley, a citizen of the State of Indiana, and a resident of Indianapolis, Indiana, bring this, their bill, against John E. Gomery, a citizen of the State of Pennsylvania, and located in Philadelphia, Pennsylvania, at 128 North Broad Street; and John C. Schwartz, a citizen of the State of Pennsylvania, and located in Philadelphia, [fol. 11] Pennsylvania, at 128 North Broad Street; and Michael J. O'Meara, a citizen of the State of Pennsylvania, and resident in the City of Philadelphia, Pennsylvania, and located at 329 South Broad Street; and Concrete Construction Company, a corporation organized under the laws of the State of Delaware, and having a regular and established place of business at 1718 Thompson Street, Philadelphia, Pennsylvania; and thereupon your orators complain and say:

1. That this is a suit arising out of, and under the statutes of the United States relating to patents, more especially Sections 4919, 4920 and 4921.

2. Plaintiff Concrete Appliances Company is the sole owner of Letters Patent No. 948,719, which were issued to Concrete Appliances Company, a corporation of Missouri, upon the application of Lee Callahan, for Material Transferring Apparatus, said letters patent having been issued by the Commissioner of Patents on February 8, 1910, pursuant to statutory application therefor, filed January 21, 1909, by the aforesaid Lee Callahan, the original and sole inventor of the subject matter thereof. A copy of said patent is attached hereto, in lieu of the original, which plaintiffs are ready to produce in court.

3. Plaintiff William H. Insley is the owner by reason of an instrument in writing, dated September 13, 1915, and executed by plaintiff Concrete Appliances Company, of the exclusive right and privilege under the aforesaid Letters Patent No. 948,719 to manufacture, use and sell to others to use, apparatus and devices embodying the invention covered by the aforesaid letters patent, except as the right to use, or to manufacture and sell to others to use, has heretofore been granted by the joint action of this plaintiff and his co-plaintiff Concrete Appliances Company.

[fol. 12] 4. The subject matter of said letters patent is of great utility and has been extensively employed in this country by and under the authority of plaintiffs and their predecessors; plaintiffs' rights under said patent are of great value and have been generally recognized and acquiesced in by the public, an exception being the infringing acts of these defendants, hereinafter set forth more in detail; said acts of defendants encouraging others to violate the rights thus secured to plaintiffs, the plaintiffs are suffering, and have suffered, great and irreparable damage, by reason of the unlawful acts of these defendants.

5. The plaintiffs and their predecessors have given adequate notice to the defendants of the existence and ownership of said letters patent and defendants' infringement thereof; and have marked, or caused to be marked, machines manufactured and sold by, or under plaintiffs' authority, in accordance with the provisions of the statutes of the United States relating thereto. Nevertheless, the said defendants have conjointly, and in conspiracy with each other, infringed upon the aforesaid letters patent, and plaintiffs' rights hereunder, within this district and after the issuances of said patent, and threaten to further infringe said patent, and at the present time are infringing said patent, said past, present and threatened infringement having been accomplished and threatened within this district and elsewhere, according to plaintiffs' information and belief, as follows:

Defendants John E. Gomery and John C. Schwartz prior to the filing of this bill of complaint, purchased from parties having no right or license under the aforesaid patent, and believed by plaintiffs herein to have been the Sackett Screen & Chute Company, of Chicago, Illinois, an apparatus for handling fresh concrete in building [fol. 13] operations, said apparatus comprising a tower, a hoisting bucket mounted and vertically movable in said tower, a hopper supported upon said tower and vertically shiftable from place to place thereon, a horizontally swinging boom pivotally mounted upon the tower and vertically shiftable thereon from place to place in co-operative relationship with the hopper, and a chute section carried by the boom and arranged and provided with means to receive concrete from the hopper and to deliver the same by gravity through the chute, and have erected, or caused to be erected, the said apparatus on the west side of Twenty-fourth Street, between Market and Chestnut Streets, in the City of Philadelphia, Pennsylvania, for the purpose of utilizing the same in the fabrication of a reinforced concrete building at that point; the defendant Michael J. O'Meara is a contractor, engaged, in association with the said defendants Gomery and Schwartz, in the fabrication of the proposed building as aforesaid. The defendant Concrete Construction Company is engaged, as a subcontractor, or otherwise, under or in association with, the defendant Michael J. O'Meara, in the direct use of the aforesaid apparatus, in the fabrication of the building.

Plaintiffs, therefore, alleged that the several defendants herein conspired together and in association with each other, and with the aforesaid fabricator of the apparatus believed to be Sackett Screen and Chute Company, in the manufacture, sale and use of the aforesaid apparatus, in infringement of the rights of plaintiffs, and for the purpose and with the intent of further infringement thereof; and that the said defendants are now using and continuing to use, said apparatus in infringement of the rights of plaintiffs, all within the Eastern District of Pennsylvania, as aforesaid.

[fol. 14] 6. Plaintiffs further allege that the aforesaid Patent No. 948,719, especially as to its claims 1, 2, 5 and 13, has been found valid by the United States Circuit Court of Appeals of the Sixth Circuit, and said claims were held infringed by a structure substantially

identical, in all material respects, with the structure herein complained of in the case of Concrete Appliances Company and William H. Insley v. Dietrich Meinken et al., and that the decision of said Court was handed down January 6, 1920.

7. Plaintiffs further aver that their rights under the aforesaid letters patent have been generally recognized and acquiesced in throughout the United States.

8. Plaintiff William H. Insley further avers that he is actively engaged in the manufacture and sale of apparatus embodying the invention set forth in the aforesaid letters patent; is fully and adequately equipped to promptly supply the demand therefor, and that he has offered apparatus manufactured under his authority to the defendants herein, in substitution for the infringing apparatus, and at a reasonable price; and further avers that the use of the aforesaid infringing apparatus by the defendants herein in violation of plaintiffs' rights under the aforesaid letters patent, tends to and does actually encourage infringement by others and that continued use of said infringing apparatus will tend to and actually will encourage others to produce infringing apparatus for their own use and that such infringements so encouraged will and do greatly damage plaintiffs herein, all in violation of the rights of plaintiffs under the aforesaid letters patent.

9. By reason of the foregoing, the plaintiffs pray the Court to issue [fol. 15] an injunction, both provisional and perpetual, restraining the defendants, and each of them, and all of their joint and several agents, employees, officers, and confederates, from making, using or selling, apparatus of the kind described in the aforesaid Letters Patent No. 948,719, or like the apparatus complained of, or similar thereto; to award to the plaintiffs the damages they have sustained, or may hereafter sustain, by reason of the infringement herein complained of; to require the defendants to account for the several profits which they have enjoyed, or may hereafter enjoy, through said infringement; and to grant to the plaintiffs such further relief as the equity of the case may demand, and to the Court may seem proper.

Concrete Appliances Company, William H. Insley. Hood & Schley, Solicitors. 908 Hume-Mansur Building, Indianapolis, Ind. Arthur M. Hood, Cyrus N. Anderson, of Counsel.

July 15, 1920.

[fol. 16] Jurat showing the foregoing was duly sworn to by Wm. H. Insley omitted in printing.

IN UNITED STATES DISTRICT COURT

ANSWER—Filed Sept. 20, 1920

The defendants, John E. Gomery, John C. Schwartz, Michael J. O'Meara and Concrete Construction Company, file this their answer to the bill of complaint herein, and say:

1. Defendants admit, for the purpose of this suit, the citizenship and residence of the parties to said suit as alleged in the bill of complaint; admit the issuance of United States Letters Patent 948,719 February 8, 1910, to Concrete Appliances Company, one of the plaintiffs herein, upon an application filed January 21, 1909, by Lee [fol. 17] Callahan; deny proper notice of the existence and alleged ownership of said letters patent and of the alleged infringement thereof prior to the filing of the bill of complaint herein; are not informed as to the allegations of paragraph 5 of the bill of complaint with reference to marking the apparatus, and therefore deny said allegations; admit the use at the location, in Philadelphia, specified in paragraph 5 of said bill of complaint, of apparatus illustrated in three photographs dated July 14, 1920, Exhibit No. 1, Exhibit No. 2 and Exhibit No. 3, which exhibits accompanied the affidavit of one Henry T. Pierce, executed July 24, 1920, and filed in this cause in support of a motion for preliminary injunction, this admission applying only to the apparatus in so far as it is revealed in said photographs, defendants expressly denying the use of apparatus such as covered by the written description in said affidavit and in said bill of complaint.

2. Defendants are not notified, save by said bill of complaint, as to the allegations contained in paragraphs 2 and 3 thereof, in so far as they relate to the title of said patent, and therefore, upon information and belief, deny such allegations.

3. Defendants deny the allegations of paragraphs 4 and 7 of said bill of complaint, and aver on information and belief that plaintiffs' alleged rights under said patent have not been generally acknowledged and acquiesced in by the public; but aver, on the contrary, there has been a marked lack of acquiescence and denial of said rights, as evidenced in part by past litigation based on said patent.

4. Defendants are informed and believe that said Letters Patent 948,719 are invalid and without force and effect, either at law or in equity, and so allege, for the reasons that (a) the things patented [fol. 18] therein and thereby were not patentable inventions or discoveries under the statutes of the United States at the time the said Lee Callahan made his alleged or supposed invention or discovery; (b) that the things patented therein and thereby did not involve invention under the statutes of the United States in view of the existing state of the art at the time the said Lee Callahan made his alleged or supposed invention or discovery; (c) that the things patented therein and thereby had been patented and described in printed publications and had been in public use and on sale in the United States prior to

the alleged or supposed invention or discovery thereof by the said Lee Callahan, and more than two years prior to the filing of his application for the said Letters Patent 948,719; and (d) that the said Lee Callahan was not the first or original inventor or discoverer of any material part of the things patented.

5. Defendants admit that the said Callahan Patent 948,719 was sustained by the United States Circuit Court of Appeals for the Sixth Circuit as to claims 1, 2, 5, and 13, but deny that said decision established the validity of said patent, or of any of said claims, as the evidence before the Court in said Sixth Circuit was insufficient to disclose properly the condition of the prior art, leading to an erroneous conclusion as to the alleged advance made in said art by the said Lee Callahan and as to the validity of said claims.

6. Defendants deny infringement of the said Patent 948,719 by the use of the said Philadelphia apparatus complained of, or of any other apparatus, and deny that said apparatus is substantially identical with the apparatus held to be an infringement by said Sixth Circuit Court of Appeals.

[fol. 19] 7. Defendants further deny the conspiracy alleged in paragraph 5 of the bill of complaint, and deny that they are now manufacturing, using, or selling apparatus in infringement of said patent; and deny the alleged intent of further infringement.

8. Defendants are not informed, save by the bill of complaint, of the allegation of paragraph 8 of said bill, and therefore deny each and every of such allegations.

9. Defendants are informed and believe, and therefore allege, that said Letters Patent No. 948,719 are invalid and without force or effect, either at law or in equity, because the things patented therein and thereby were, prior to the alleged or supposed invention or discovery thereof by the said Lee Callahan, and in certain cases more than two years prior to the application for said letters patent, known to and in public use and on sale in the United States by the following:

The Ferro Concrete Construction Company in 1903, in the erection of the Ingalls Building, Fourth and Vine Streets, Cincinnati; and elsewhere.

Jean Jameton in 1905, in the erection of the Farragut School, St. Louis, Mo.

Arthur L. Smith in 1906, in the erection of the Lynn Haven Hotel, Norfolk, Va., and in 1907 in the erection of the Vinery Building, Norfolk, Va.; and elsewhere.

Theodore Emtman in 1907, in Los Angeles, Cal.

Edward C. Gerhard in 1907-08, in St. Louis, Mo., in the erection of the Clark school.

Gray-Wimmer Construction Company in 1908, in the erection of the Coliseum Building, Twenty-fifth Street and Washington Avenue, St. Louis, Mo.; and elsewhere.

[fol. 20] Gilsonite Construction Company, St. Louis, Mo., in the erection of the Baden reservoir in 1903-1906.

American Theatre and Hotel Building, Seventh and Market Streets, St. Louis, Mo., in 1907.

Tootle-Campbell Dry Goods Company building, St. Joseph, Mo., in 1908.

Lee D. Lewman and Manhattan Construction Company, of Muskogee, Okla., the apparatus being assembled at Fort Smith, Ark., in 1907, and similar apparatus being used subsequently in Oklahoma City, Okla.

R. Kletting, in 1907-08, in the erection of the McIntyre Building, Main Street, Salt Lake City, Utah.

T. E. Jewett, in 1908, in the erection of the Majestic Theatre in Houston, Texas, and subsequently.

Pennsylvania Railroad Company elevator in 1903, Germantown Junction, Pa., designed by George M. Moulton & Company, Chicago, and built by Seeley, Son & Company, of Fremont, Neb.

West Shore Railroad Company Elevator, in 1902, Weehawken, N. J., designed and built by George M. Moulton & Company, Chicago.

Redman-Magee Elevator Company, Cairo, Illinois, in 1903, designed and built by George M. Moulton & Company, Chicago.

Consolidated Elevator Company extension to their Elevator E in 1899, Duluth, Minn., designed by Moulton-Starrett Company and built by the Barnett & Record Company, Minneapolis, Minn.

Albert E. Kulp and George Botzung, at Cincinnati, Ohio; John S. Bronson, Herman A. Bankes, W. L. Wimmer, John W. Goebel, Eugene Taylor, George W. Herthel, W. J. Knight, all of St. Louis, Mo.; and W. C. Englart and John M. Witherspoon, both of Chicago, Ill. [fol. 21] nois. And also known to and used by various other persons and concerns, whose names and the places of their prior uses, public uses, and sales are not known to these defendants, but which it is prayed may be inserted herein by amendment, when known to these defendants subsequently, to make this answer more definite and certain in those respects.

10. The following patents, names of parties mentioned in said patents as evidence of prior invention and prior knowledge and use, printed publications and users are among those supporting these defenses and to which defendants make reference, to wit:

- 69,375, Oct. 1, 1867, Van Voorhis.
- 243,327, June 21, 1881, Toepfer.
- 366,468, July 12, 1887, Edwards, et al.
- 371,343, Oct. 11, 1887, McLennan.
- 426,301, April 22, 1890, Musgrave, et al.
- 445,645, Feb. 3, 1891, Simpson.
- 524,984, Aug. 21, 1894, Robinson.
- 556,371, Mar. 17, 1896, Rasch.
- 560,382, May 19, 1896, Walsh.
- 582,598, May 11, 1897, Bird.
- 605,375, June 7, 1898, Bellinger.
- 622,019, Mar. 28, 1899, Robinson.
- 694,579, Mar. 4, 1902, Ransome.
- 702,372, June 10, 1902, Montgomery.

718,092, Jan. 13, 1903, Clarke.
 721,215, Feb. 24, 1903, Metzger.
 753,616, Mar. 1, 1904, Nicholson.
 760,015, May 17, 1904, Parker.
 769,126, Aug. 30, 1904, Adams.
 830,385, Sept. 4, 1906, Wallace.
 862,874, Aug. 13, 1907, Beach.
 866,166, Sept. 17, 1907, Theiss, et al.
 875,529, Dec. 31, 1907, Joehnck.
 948,723, Feb. 8, 1910, Emtman.
 969,172, Sept. 6, 1910, Lonney.

[fol. 22]

English Patents

1,124, May 24, 1864, Potter.
 3,107, Oct. 22, 1872, Ellington, et al.
 2,017, May 18, 1880, Johnson.
 10,380, July 17, 1888, Baillie.
 16,525, Sept. 3, 1895, Roe.
 19,554, Sept. 10, 1903, Holland, et al.

Publications

Engineering News, July 30, 1903, page 97.
 Concrete, January, 1905, page 23.
 The Cement Era, 1906, Vol. IV, page 24.
 The Cement Era, 1907, Vol. V, page 154.
 Engineering Record, October 12, 1907, page 405.
 Engineering Record, November 2, 1907, "Heavy Foundations for
 the New Steel Works at Gary, Ind."
 Concrete Engineering, November, 1907.
 The St. Louis Republic, February 16, 1908, page 3, article entitled
 "New American Theatre Opening Tomorrow Is Model of Handsome
 and Safe Play House Construction."
 "Buildings of Character," a catalogue published by the Gray Con-
 struction Company of St. Louis, Mo.
 Said alleged invention is also disclosed in other Letters Patent of
 the United States and foreign countries which are not now known to
 these defendants, but which it is prayed may be inserted herein by
 amendment when known to these defendants, to make this answer
 more definite and certain in those respects.

11. These defendants are informed and believe, and therefore al-
 lege, that the said Lee Callahan was not the original and first in-
 ventor or discoverer of any material and substantial part of the thing
 patented, and that he and his assignee, Concrete Appliances Com-
 [fol. 23] pany, a corporation of Missouri, surreptitiously or unjustly
 obtained a patent for that which was in fact invented by others, who
 were using reasonable diligence in adapting and perfecting the same,
 to wit, the individuals mentioned in the preceding paragraphs 9
 and 10.

12. These defendants deny the allegations of the bill of complaint which have not been hereinbefore denied or admitted, and allege that the plaintiffs have no cause of action against them, all of which they are ready to maintain and prove, as this Honorable Court shall direct, and pray that the plaintiffs' bill of complaint be dismissed and that these defendants be discharged with their costs and expenses in this behalf most wrongfully sustained.

John E. Gomery, John C. Schwartz, Michael J. O'Meara, Concrete Construction Company, Defendants. Sheridan, Jones, Sheridan & Smith, by Thomas H. Sheridan, Solicitors for Defendants, Marquette Building, Chicago, Illinois.

IN UNITED STATES DISTRICT COURT

STIPULATION FOR AMENDMENT TO ANSWER—Filed September 25, 1920

(The references in this stipulation refer to the original record.)

It is hereby stipulated and agreed that the answer of Gomery, et als., in the above-entitled cause shall be corrected as follows:

Page 2, line 6, after "affidavit" insert —and—.

Page 5, line 4, cancel the numeral "3" and the comma following it. [fol. 24] Page 5, line 10, insert the word —Building— after "Tootle Campbell Dry Goods Company."

Page 5, fifth from last line, correct the spelling of "George."

Cyrus N. Anderson, for Plaintiffs. Wm. Steell Jackson, for Defendants.

Philadelphia, Pennsylvania, September 24, 1920.

IN UNITED STATES DISTRICT COURT

AMENDMENT TO ANSWER

(The references in this amendment to answer refer to the original record)

Defendants hereby amend their answer as follows:

Page 4 of the printed copy, line 2, change "allegation" to allegations.

Lines 11 and 12, change "and" to or.

Line 16, erase "1905 in the erection of the Farragut School."

*Line 19, erase "and."

*Line 20, before "and" insert —in 1908 in the erection of the St. Louis Coliseum Building.

*Line 22, change "1907-8" to 1905-10.

*Line 23, change "Clark School" to —Farragut, Clark and Franklin Schools.

Lines 28 and 30, change the period to a semicolon.

Page 5, line 1, change the date to 1908-9.

Line 3, change "1908" to 1909.

After the seventh paragraph ending with "Illinois," insert the following:

Bates and Rogers Construction Co., Chicago; Illinois Central Railway, Paydras St. Warehouse, New Orleans; A. Bentley & Sons Co., Toledo, Ohio; James Stewart & Co. of Chicago; Great Lakes Dredge & Dock Co., Chicago, Detroit, Toledo, Cleveland; Webster Mfg. Co. [fol. 25] of Chicago; Geo. B. Swift Co. of Chicago.

Blast Furnace No. 3, 1908, Tenn. Coal & Iron Co., Birmingham, Ala.; Masonic Temple, Toledo, Ohio, 1904; Utah Copper Co., Garfield, Utah, 1906; Utah Trust & Savings Bank, Salt Lake City, Utah, 1906; McGraw Building, New York City, 1906-07; Dickson Building, Norfolk, Va.; New York Central Railway, Detroit River Tunnel; Gary Steel Plant, Gary, Ind.; Iroquois Iron Co., South Chicago, Ill.; Round House, Richmond, Cal.; Cambridge Bridge, Boston, 1902; D. L. & W. Railway Bridge 27, near Waverly, Pa., 1904; Connecticut Ave. Bridge, Washington, D. C.; Big Trees, Cal., 1906; C. M. & St. P. R. R. Bridge Z 988, Pickering, Ia., 1906; Baltimore & Ohio Railway, Baltimore Coal Dock, 1900; Weber Dam, Lyon, Michigan, 1906; *Healy & Tibbets Construction Co., Piers 42 and 44, San Francisco, Cal., 1906.

James R. Gloyd, Cleveland, Ohio; J. W. Thompson, New Orleans; J. S. Ruble, Cleveland, Ohio; J. L. Mensch, Chicago; W. R. Sinks, Chicago; R. S. Folwell, Chicago; J. R. Williams, New York; Frank B. Gilbreth, Montclair, New Jersey; M. J. Hauser, Pasadena, Cal.; Charles A. Fellows, Los Angeles, Cal.; W. H. Kirkland, San Francisco, Cal.; Lewis A. Hicks, Berkeley, Cal.; John G. Howard, Berkeley, Cal.; J. E. McDonald, Oakland, Cal.; Albert Lunde, Adams, Minn.; Wm. T. McCann and Alexander Cameron, both of Chicago.

*Fount M. Woodward, Andrew W. Woodman, Henry O. Webb, Jerome C. Alderman, Alexander C. Patterson, Carl T. Anderson, Louis A. Stinson, Howard C. Blake, Harold D. Squires, D. J. Fueik, R. H. Hughes, all of Chicago, Ill.; Robert B. Preston and Town-[fol. 26] send A. Tatterson, of Norfolk, Va.; Samuel C. Black, F. C. Bonsack, and James L. Hopkins, all of St. Louis, Mo.; Hugh Bryson, L. A. Parker, Luther M. Hill, Swan P. Johnson, and Kurt O. Wetzel, all of Los Angeles, Cal.; Charles C. Horton, Martin E. Brown and Fred L. Ayers, all of San Francisco, Cal.; William G. Fargo and Harold S. Hunt, of Jackson, Mich.; and Fred Brunner, Pittsburgh, Pa.

Add to the list of publications on page 7, ending "St. Louis, Missouri," the following:

Publication	Date	Page	
Engineering Record.....	May 30, 1903	575	Danville Dam;
" "	July 9, 1904	40	New Croton Dam;
" "	Nov. 26, 1904	619	Morris & Essex Div., Lackawanna R. R.;
" "	July 28, 1906	88	Chalmette Docks, New Orleans, La.;
" "	Aug. 25, 1906	200	Manhattan Bridge;
" "	Nov. 10, 1906	523	Hotel Traymore, Atlantic City;
" "	Jan. 19, 1907	74	Washington Apartments;
" "	July 6, 1907	13	Chain of Rocks, St. Louis;
" "	July 13, 1907	32	Track Elevation;
" "	Oct. 19, 1907	418	Three Low Head, etc.;
" "	Oct. 26, 1907	462	Three Low Head, etc.;
" "	May 1, 1909	564	Painsville Bridge;
" "	Apr. 3, 1909	424	Upson Nut Co. Dock;
" "	Dec. 11, 1909	650	Surety Building, Muskogee, Okla.;
" "	Feb. 14, 1914	177	Editorial on Autoclave Test;
" "	May 16, 1914	551	Autoclave Cement Patent;
Engineering News.....	June 2, 1892	554	Cascades Canal, Oregon;
" "	Feb. 28, 1901	149	Cement Mixing Machine;
" "	Oct. 17, 1901	282	New Cambridge Bridge;

[fol. 27]

" "	Dec. 25, 1902	537	Depositing Concrete by Chutes;
" "	July 30, 1903	90-93	Ingalls Building;
" "	Mar. 2, 1905	214	Double Track Work by John W. Ash;
" "	Mar. 16, 1905	287	Masonic Temple, Toledo, Ohio;
" "	Mar. 30, 1905	330	C. M. & St. P. Bridge at Kilbourn, Wis.;
" "	Apr. 19, 1906	437	City of Mexico Structure;
" "	May 31, 1906	606	By W. G. Fargo, of Jackson, Mich.;
" "	Aug. 12, 1915	289	
		306	
		316	Several articles;
		318	
		321	

Engineering Contracting..	June 27, 1906	75	Street Mixer & Boom;
Engineering Contracting..	Sept. 26, 1906	81	Philadelphia Rapid Transit Co.;
Engineering Contracting..	Nov. 4, 1908	291	Paving Apparatus
Mines and Minerals....	Dec. 1903	205	Article by S. H. Lea.

Books and Catalogues

Publication	Date	Page	
On Limes, Hydraulic Cements and Mortars.	1890	236	Gilmore;
Reinforced Concrete....	1906	187	Chas. F. Marsh;
Concrete, Plain and Reinforced.	1905	368	
		369 & 371	Taylor & Thompson;
Concrete & Reinforced Concrete.	1907	108	Reid;
Concrete System.....	1908	49	
		103	Frank Gilbreth;
		57	
Concrete Construction..	1908	216	Gillette & Hill;
Michigan Engineer.....	1905-1908	144	Wm. G. Fargo;

Publication	Date	Page
Transactions of American Society of Civil Engineers, Vol. LIV, Part E.	1904	463 596 610}
Transactions of American Society of Civil Engineers, Vol. LX. June, 1908		494 453-56 481}
[fol. 28]		Article on McGraw Bldg. ;
*Construction of Masonry Dams.	1915	66 64
Proceedings of the National Association of Cement Users, Vol. 6.	1910	188 203 326 511}
Grain Elevator Construction.	1902	G. M. Moulton & Co., Chicago;
Ransom Concrete Machinery Handbook.	1906	
Webster Mfg. Co., Catalogue M.	1901	
Great Lakes Dredge & Dock Company's Catalogue.	1912	

Page 6, in the list of United States patents, insert the following in numerical order:

- *464,101, Dec. 1, 1891, Mayo,
- *667,335, Feb. 5, 1901, Record,
- *681,378, Aug. 27, 1901, Shoemaker,
- 711,825, Oct. 21, 1902, Clarke,
- 714,150, Nov. 25, 1902, Clarke,
- *939,072, Nov. 2, 1909, Ney.

Also add the following British patent:

*Gibbs, 7,307 of 1908, application filed April 2, 1908, accepted April 1, 1909.

Page 7, line 16, change "patent" to patents and publications; and after line 30, insert:

*Defendants allege that the concrete distributing devices used by them in the construction of their building are not described or claimed in said Letters Patent 948,719, and that said suit as maintained against them and more particularly against the defendant Concrete Construction Company, charging it with infringing certain claims of said Letters Patent, is, in effect, a cloud upon its right to [fol. 29] conduct its business in a lawful manner, i. e., the construction of buildings in the City of Philadelphia and elsewhere; and defendant prays—

1. That said letters patent may be declared invalid; and

2. That the said devices heretofore used and being used by said defendant in the construction of buildings may be held not to be an infringement of any claim of said letters patent.

George Bayard Jones, Solicitor for Defendants.

Chicago, February 2, 1921.

I hereby consent to the foregoing amendment [the parts not marked with asterisks (*)] without waiving the right to imposition of terms by the Court.

Arthur M. Hood, Solicitor for Plaintiffs.

September 30, 1921.

The portions marked with asterisks, (*), except the insertion for line 30, page 7, which have been added to the amendment since February 2, 1921, are hereby consented to without waiving the right to imposition of terms by the Court.

Arthur M. Hood.

Approved: — — —, U. S. District Judge.

[fol. 30] IN UNITED STATES DISTRICT COURT

DEFENDANTS' INTERROGATORIES TO PLAINTIFFS—Filed October 15,
1920

Now come the defendants, by their solicitors, and propound the following interrogatories for answer by plaintiffs.

The alleged infringing structure shown in your three photographs of July 14, 1920, Exhibits Nos. 1, 2 and 3, which accompany the affidavit of Henry T. Pierce, executed July 24, 1920, comprises what you have termed in said affidavit three units i. e., tower A with its associated appliances, and two towers B with their associated appliances, units A and B representing two different kinds of concrete distributing apparatus as follows:

(A) Apparatus comprising a tower A, hoist bucket 1, elevated hopper 2, and one or more lines of chutes supported from a cable secured to the upper part of the tower and to a distant point.

(B) Apparatus comprising a tower B, hoist bucket 1, elevated hopper 2 on a frame 3 slidably supported on the tower B, and a trussed chute or conduit 4 pivoted to the frame 3 at one end and supported from the tower by block and tackle 6 at the other end.

Interrogatory 1. Do you allege that the apparatus of paragraph A is an infringement of Callahan Patent 948,719?

Interrogatory 2. Do you allege that the apparatus of paragraph B is an infringement of Callahan Patent 948,719?

[fol. 31] The foregoing interrogatories are filed in lieu of defendants' prior interrogatories dated September 21, 1920, which latter are hereby withdrawn.

John E. Gomery, John C. Schwartz, Michael J. O'Meara, Concrete Construction Company, Defendants, by Sheridan, Jones, Sheridan & Smith, Solicitors.

Chicago, September 28, 1920.

Service hereby acknowledged of a copy of the foregoing interrogatories September 29, 1920.

Hood & Schley, Solicitors for Plaintiffs.

IN UNITED STATES DISTRICT COURT

PLAINTIFFS' ANSWERS TO DEFENDANTS' INTERROGATORIES—Filed October 11, 1920

Now come the plaintiffs by their solicitors, and answer defendants' interrogatories as follows:

Answer to interrogatory No. 1. As the construction and operation of tower A is at the present time understood, no claim of infringement is made by plaintiffs against the same.

Answer to interrogatory No. 2. Yes.

Concrete Appliances Company, William H. Insley, by Hood & Schley, Solicitors for Plaintiffs.

October 7, 1920.

[fol. 32] IN UNITED STATES DISTRICT COURT

DEFENDANTS' ADDITIONAL INTERROGATORIES TO PLAINTIFFS—Filed December 23, 1920

Now come the defendants, by their solicitors, and propound the following interrogatories for answer under oath by plaintiffs.

1. State which claims of the Callahan patent in suit you will rely on at the hearing.

2. What is the earliest date of the alleged invention of the structures of the respective claims of the Callahan patent relied on in this suit? Answer for each claim.

John E. Gomery, John C. Schwartz, Michael J. O'Meara, Concrete Construction Company, Defendants, by George Bayard Jones, Solicitor.

Service hereby acknowledged of a copy of the foregoing interrogatories December 16, 1920.

Arthur M. Hood, Solicitor for Plaintiffs.

Before Dickinson, J.

It is hereby ordered and decreed that the foregoing interrogatory be answered by the solicitor for the plaintiffs within ten days of the date of this order.

By the court.

Attest:

Leo A. Lilly, Deputy Clerk.

[fols. 33 & 34] IN UNITED STATES DISTRICT COURT

ANSWER TO INTERROGATORY NO. 1 OF DEFENDANTS' ADDITIONAL INTERROGATORIES TO PLAINTIFFS—Filed January 8, 1921

Defendants, by their solicitor, on December 23, 1920, having presented a motion that interrogatories numbered 1 and 2 presented in defendants' additional interrogatories to plaintiffs be answered, and it having been agreed and ordered that interrogatory numbered 1 should be answered by plaintiffs' solicitor and that interrogatory numbered 2 should not be answered:

Now come the plaintiffs, by their solicitor, and answer interrogatory numbered 1 as follows: that as at present advised and as previously stated plaintiffs will rely at the trial of this suit upon claims 1, 2, 5 and 13, which are the claims specified in paragraph numbered 6 of the bill of complaint.

Cyrus N. Anderson, Solicitor for Plaintiffs.

[fol. 35] IN UNITED STATES DISTRICT COURT

[Title omitted]

Depositions of witnesses taken before F. C. Tilghman, a notary public for the city of Norfolk, Virginia, pursuant to notice and agreement, at the office of Phlegar & Tilghman, Law Building, Norfolk, Virginia, May 2, 1921, at 10 o'clock a. m., to be read as evidence on behalf of the plaintiffs in the above-entitled cause, pending in the United States District Court for the Eastern District of Pennsylvania.

Present: Mr. Cyrus N. Anderson for the plaintiffs; Mr. Glen E. Smith for the defendants.

[fol. 36] It is agreed that F. C. Tilghman may act as Notary instead of H. H. Chalkley whose name appears in the notice.

CHARLES COOPER (col.), being first duly sworn, testified on behalf of the plaintiffs as follows:

Examined by Mr. Anderson:

Q. 1. What is your name?

A. Charles Cooper.

Q. 2. What is your age?

A. I will be 40 years old the 7th of this coming May, born in 1881.

Q. 3. What are you doing now?

A. I run a huckster wagon.

Q. 4. Did you ever work for a man by the name of E. Tatterson?

A. Yes, sir.

Q. 5. Did you work on the Lynnhaven Hotel Building?

A. Yes, sir.

Q. 6. About when was that?

A. As near as I can come at it, it was about 1906. I think that was the year I started working there.

Q. 7. Just what did you do when you worked on that building?

A. I bent steel and rolled concrete and helped tear down when they wasn't concreting,—tear down the forms. I was just a workman around there. I done anything they asked me to do.

Q. 8. Did you do any grading of concrete?

A. Yes, sir, I graded some.

Q. 9. Did you haul any of the concrete in wheel barrows?
[fol. 37] A. I did, yes, sir.

Q. 10. Do you know how the concrete was poured or laid in that work?

A. All I know, they just had men there to roll the cement and gravel and sand into the hopper and the hopper would have a mixer there to turn it over and after it got mixed they would put the wheel barrow right up under the mouth of the hopper and the fellow there would let it shoot up and let it come down until the wheel barrow got full and he would cut it off and the men out on the floor would dump it and there would be a man out there with a rake and a tamper to smooth it down and tamp it down.

Q. 11. That is, the concrete was poured right out from the hopper into a wheel barrow?

A. Yes, sir.

Q. 12. And then was hauled in the wheel barrows to different places in the building; is that what you mean?

A. Right out on the floor, yes, sir.

Q. 13. After that it was graded and tamped?

A. Tamped, yes, sir.

Q. 14. Did you ever see any troughs used in the discharge of that concrete from the hopper?

A. No, sir, I didn't see them. The only trough about the hopper was just a little chute, I guess, about that long and about that wide just where the concrete run out of the hopper into the wheel barrow and he would cut it off. That is the only chute that was anywhere

around when I was there and I worked there from the first floor clean up to the top and left there and went over to the building right across the street.

Q. 15. Is that the Vinery Building?

[fol. 38] A. Yes, where Levy's store is now, I think. Mr. Levy has got a furniture store there.

Q. 16. Did you work on that Vinery Building?

A. Yes, sir.

Q. 17. Do you happen to remember about when they finished the concrete part of the work on the Lynnhaven Hotel?

A. What year, you mean?

Q. 18. Yes. You started in 1906 and about when did you finish up the concrete on that Lynnhaven Building, if you remember?

A. I just don't remember but I know I worked there clean until it was finished all right. I don't want to tell nothing wrong.

Q. 19. Over on the Vinery Building how was the concrete distributed on the floors?

A. Just by wheel barrows.

Q. 20. Were any troughs used over there?

A. No, sir, nothing but a hopper, transferred the same things right over there, right over to the Vinery Building.

Q. 21. What work did you do over on the Vinery Building?

A. I went over there to the Vinery Building and Mr. Smith put me down in the hole, tamping and leveling the concrete, leveling it down to a certain gauge of the steel after we got over there. He put me down with another fellow, leveling the cement off and tamping it down. Of course, the way that was, they just had a board coming right from the hopper, a run-way where you could run a wheel barrow over it, run the wheel barrow up there and dump it over in that hole and we would tamp it down and level it off. That would [fol. 39] be for the foundation. That was to make the steel in one position, you know, solid.

Q. 22. How about the floors? Did you do the floors the same way?

A. Yes, when they got up high enough to work the floors he would build a stage so the elevator could come up and bring the sand and gravel like that to dump it in the hopper.

Q. 23. The hopper was just above the floor level, was it?

A. Yes, sir.

Q. 24. How high above the floor level?

A. The hopper is just high enough so you could run a wheel barrow underneath it.

Q. 25. Was that the same over in the Lynnhaven Building?

A. Yes, sir.

Q. 26. And you don't remember seeing any troughs in neither building?

A. Neither building.

Q. 27. How long did you work in the Vinery Building?

A. I worked there in the Vinery Building until all the concreting was over, until they commenced tearing down the forms, commenced tearing down all the forms.

Cross-examination by Mr. Smith:

X Q. 28. How are you able to determine the date when you started this work on the Lynnhaven Hotel? How are you able to fix the date when you started this work on the Lynnhaven Hotel?

A. How was I able to fix the date?

[fol. 40] X Q. 29. You said you began work there in 1906. How do you know it was 1906?

A. I know I got married in 1905 and I was working down at Lamberts Point soon after I got married and I left Lamberts Point and come to work for the Virginia Railway & Power Company and then I left the Virginia Railway & Power Company and went to work for the Lynnhaven Hotel because some of the fellows had been working for the Virginia Railway & Power Company and were getting more at the Lynnhaven Hotel than they was getting from the Virginia Railway & Power Company and I seen them and they told me I could get more at the Lynnhaven Hotel than I could at the Virginia Railway & Power Company and I left there and went to work there.

X Q. 30. About what time of the year 1906 did you begin work there?

A. Well, I don't just know the month but I know it was kind of in the summer time because I was working in my shirt sleeves. It wasn't cold, I know. Just to say what time of year it was, I don't know.

X Q. 31. Was the concrete work on this hotel rushed along? Did they work on it as fast as they could in order to finish it up?

A. Yes, they would work on it some nights until 10 or 11 o'clock. Of course, if we would start a floor and couldn't finish it by time to knock off Mr. Smith would holler down stairs and tell the boys "We want you all to work tonight until we finish this floor." That might be until 10 or 11 o'clock before they finished.

[fol. 41] By Mr. Anderson:

R. D. Q. 32. Do you know whether that was Arthur L. Smith?

A. I know it was the old man.

R. D. Q. 33. Was it the Smith in charge, the superintendent?

A. Yes, sir. I don't know whether his name was Arthur L. Smith but I know his name was Mr. Smith.

By Mr. Smith:

R. D. Q. 34. Do you recall whether the concrete work was completed on that building before cold weather in that year?

A. Yes, sir, if I am not mistaken, I think it was before cold weather.

R. D. Q. 35. You have stated a while ago that you bent steel and did a lot of other jobs of that kind with respect to work around the building. Do you remember how much time you put in on bending steel and so on? Were you on that kind of work a large part of the time?

A. The most of my time after getting on the first floor there, me and another fellow was bending steel. The onliest time Mr. Smith would call on us for us to work on the concrete would be when they would get in a rush and want to finish up that floor because they wouldn't want the cement to set.

R. D. Q. 36. That is the only time you worked on the concrete?

A. Yes, sir, when he would call on us because me and Lewis was bending steel until they got over there to this Vinery Building and then they took us off steel and put us on the concrete.

[fol. 42] R. D. Q. 37. During the construction of the Lynnhaven Hotel then you only worked on the concrete occasionally?

A. Yes, sir, just occasionally, not for a regular thing.

R. D. Q. 38. You weren't on that concrete work continuously all the time?

A. Continuous right along, no, sir; but I was there until the job was finished.

R. D. Q. 39. You were around the building?

A. Yes, sir, working from bottom to top.

R. D. Q. 40. But you weren't always up where the concrete was actually made?

A. Yes, because I used to go up and put the steel in and wire it.

R. D. Q. 41. You carried it up there?

A. Yes, sir, great long gutters. I guess it would be a pillar, just the same as a joist. I don't know what you call it.

R. D. Q. 42. How large a building is this Lynnhaven Hotel? Does it cover half a block or what would you say is the size of it?

A. No, sir, it don't cover a half block. About as near as I could get at it, the Lynnhaven Hotel is near about as big as that building right there or maybe a little bigger.

R. D. Q. 43. When you were working on that concrete you were carrying the steel up there to lay it in place and you were always at the place where the concrete was being laid; is that it?

A. Yes, sir.

R. D. Q. 44. You didn't work around the hopper?

A. Yes, sir, sometimes I would be around the hopper when they would put me rolling a wheel barrow.

[fol. 43] R. D. Q. 45. You didn't work on the wheel barrows, did you?

A. What?

R. D. Q. 46. Did you work on the wheel barrows?

A. Sure, I rolled them all right.

R. D. Q. 47. You did that occasionally?

A. Yes, whenever they would be in a rush they would call for me and Lewis to come up and help roll the wheel barrows, especially at night.

R. D. Q. 48. You did any job they happened to call on you to do?

A. Yes, I did anything they called on me to do, tear down and tore out and do anything they said to do.

R. D. Q. 49. Troughs might have been used in connection with this hopper without your having seen them?

A. No, sir, if they had been used I could have seen it.

R. D. Q. 50. You weren't up there all the time where the hopper was being used?

A. I know I wasn't but if they could put a trough on I know it would take time and they wouldn't have all that time to have it done. What I speak about a trough, a trough is something to put concrete here and trace it all the way around, but they didn't have nothing like that.

R. D. Q. 51. You don't remember anything of that kind?

A. No, sir, I don't remember anything like that.

R. D. Q. 52. Did you work on other concrete buildings after the Vinery Building?

A. No more than them two.

R. D. Q. 53. What have you been doing since that time?

A. Well, I have been doing long shore work and pile driving work and working for the Virginia Railway & Power Company. I went back to work for those people. I worked with them ten years [fol. 44] and then commenced with the war I stopped with them and went to work for the long shore and pile driving and when they stopped that I went to work for myself, but the onliest building I ever seen in Norfolk with a hopper on it was this building out here by the Norfolk & Western Railroad, a gas house out there. That is the only building I seen with a hopper on it. That had a hopper with a chute on it and concrete would run down and they would take the chute and carry it anywhere all over the place like that and spread the concrete. That is the onliest one I ever seen. I think that was the one.

R. D. Q. 54. Where was that?

A. Out on the Norfolk & Western Railroad track.

R. D. Q. 55. Has anything happened since 1906 to recall this Lynnhaven Hotel job to your mind?

A. No, sir, not to my knowledge.

R. D. Q. 56. When was it first brought to your attention now?

A. What is that?

R. D. Q. 57. This Lynnhaven Hotel job?

A. This gentleman first brought it to me. I just happened to meet Mr. Kerns last Monday down here and I had a long talk with him about where he had been and he said he had been looking for me on a job to work but he didn't say nothing to me about no hotel or nothing like that and this morning I was upstairs and the door bell rang and my wife went to the door and somebody said they wanted to see Charlie Cooper and I went down and it was Mr. Kerns and he told me to come down to the Monticello Hotel and then I come in there and wondered what business I had to do down there. I never had no business in the Monticello Hotel and he said there was [fol. 45] a gentleman down there who wanted to see me on behalf of something about the Lynnhaven Hotel. I told him I would be down here about ten o'clock.

R. D. Q. 58. About how many other workmen were employed on this building, in the same kind of work that you did?

A. Well, I reckon nearly fifty men or a hundred men, white and colored.

R. D. Q. 59. Do you know whether any of those men are around here now?

A. I think I know where one or two of them are at. I think, if I am not mistaken, I can get the very boy that worked right at the hopper. I seen him last Saturday night. I don't know where I could locate him now. He goes and comes so much, but he is the boy that worked right at the hopper.

R. D. Q. 60. Did all of these fellows do the same work that you did, tamping cement and grading it and so on?

A. Yes, sir. Mr. Butts is a white gentleman. I think he lives in Berkley, if you could get hold of him. He could give you the details of it because he built all the forms for the concrete.

Signature waived by agreement of counsel.

WILLIAM T. BAKER, being first duly sworn, testified on behalf of the plaintiffs as follows:

Examined by Mr. Anderson:

Q. 1. Please state your name, age, residence and occupation?

A. William T. Baker; 55 years old; residence, Indian River. My address is R. F. D. No. 2, Box 182; occupation, builder.

[fol. 46] Q. 2. With what firm are you connected?

A. Baker-Brinkley Company.

Q. 3. Are they contractors and builders?

A. Yes, sir.

Q. 4. How long have you been engaged in business with Mr. Brinkley?

A. About 12 years or something like that, between 10 and 12 years. I don't know the exact date.

Q. 5. Did you know Mr. E. Tatterson of Norfolk who died some few months ago?

A. Yes, sir.

Q. 6. Were you ever employed by him?

A. Yes, sir.

Q. 7. In what capacity?

A. Superintendent.

Q. 8. Do you remember the building of the Lynnhaven Hotel?

A. Yes, sir, I was with him at the time.

Q. 9. That is now the Southland Hotel?

A. The Southland Hotel.

Q. 10. And were you his superintendent at that time?

A. Yes, sir.

Q. 11. Will you please tell what you know about the building of that building?

A. Well, he had a man, a fellow by the name of Smith who was foreman on that job, who had charge of the construction of it at the time and I visited the job occasionally. Sometimes I would go up

there once a day, sometimes twice a day and sometimes it would be three or four days between the times I was on the job.

Q. 12. Did you make those visits in your capacity as superintendent for Mr. Tatterson?

[fol. 47] A. Yes, sir, I most always went up there when Mr. Tatterson would ask me to go.

Q. 13. And when you made those visits there did you go up on the building on the different floors.

A. Yes, I would go around on different floors. Sometimes I would go on the floors and sometimes I wouldn't.

Q. 14. About when was that building started, do you know?

A. Well, I imagine it was started in 1906, maybe the latter part of June or first of July—sometime about that time. I was building the Fairfax at the time and the Paul-Gale-Greenwood and I think it was the first of May when I started the Fairfax.

Q. 15. Do you recall about when the building was completed, the Lynnhaven Hotel Building?

A. I think it was the spring of 1907 or something like that,—some time about that time.

Q. 16. What enables you to fix those dates—anything special?

A. No, nothing special.

Q. 17. Was it built before or after the Jamestown Exposition?

A. It was started before and it was completed some time during the year of the Jamestown Exposition, in 1907.

Q. 18. Do you know whether or not they were trying to complete it so it could be used during the Exposition?

A. Yes, I think they were trying to complete it to use it during the Exposition.

Q. 19. What is your recollecton as to the manner in which the concrete was distributed on the different forms in that building?

[fol. 48] A. My recollection is that is was distributed in wheel barrows on the building and carried up to a hopper by an automatic dumper and dumped into a hopper and distributed from that hopper into wheel barrows on the building.

Q. 20. Where was it mixed, on the street?

A. In the mixer on the street.

Q. 21. On what street was that, do you recall?

A. On Granby street.

Q. 22. Granby or Freemason, which?

A. I think it was near the corner of Granby and Freemason, somewhere along there. I don't remember the exact location of the tower now.

Q. 23. I show you this photograph, Defendants' Exhibit No. 19 and will ask you if you recognize it?

A. Yes, I think I have got one just exactly like that, taken about the time that was. I also had some taken at the Fairfax Hotel at the time.

Q. 24. From that photograph where does it appear that the hoist tower is in which the concrete was carried up?

A. On Freemason Street, back on the far side of Freemason Street.

Q. 25. As I understand, the concrete was mixed down at the base of the tower?

A. At the base of the tower.

Q. 26. And was carried up in an ordinary hoist bucket and when it got to the top of the tower what happened to it then?

A. There was an automatic dump. It run over and tilted it right over into the hopper.

[fol. 49] Q. 27. And then after it got into the hopper what happened to it?

A. It was distributed from the hopper. There is a gate in this hopper that he raises up and dumps it into the wheel barrows from the hopper and it was distributed on the floor from the wheel barrows.

Q. 28. Do you recall actually having seen it dumped out into those wheel barrows and hauled away?

A. Yes, sir.

Q. 29. Do you recall having seen it distributed in any other way?

A. No, I never saw it distributed in any other way at all,

Q. 30. Did you ever see troughs used for distributing it from the hopper around to different places?

A. No, I don't know. He may have used a trough but I didn't see any used. He wasn't using any trough when I was on the job at any time.

Q. 31. You visited the building frequently?

A. Yes, sir, I visited the building frequently.

Q. 32. I show you Defendants' Exhibit No. 20, Smith sketch of Lynnhaven Hotel apparatus, and will ask you if you ever saw any such apparatus as that used for the distribution of the concrete on this building?

A. No, I never seen him use anything like that on the building at all.

Q. 33. It has been testified by Mr. Smith that he used troughs such as are shown in this sketch and perhaps even a third trough for the distribution of the concrete from the fourth to the seventh floor on this building. Do you think it is possible that he could have done that without your seeing it?

[fol. 50] A. No, I don't think he could have poured all that from the fourth to the seventh floors without my seeing it. I don't think it would have been possible for him to have done it.

Q. 33½. What is your recollection as to the height above the floor on which the concrete was being poured?

A. That the tower extended above the floor? You mean the hopper or the tower?

Q. 34. The hopper?

A. Well, we usually use a hopper about three feet from the floor in order to run a wheel barrow under without striking the bottom of the hopper.

Q. 35. In that particular building how high was the hopper from the floor?

A. About three feet.

Q. 36. Now, then, as to the tower on which the hopper was sup-

ported, how far above the floor ordinarily in that particular construction did it extend above the floor?

A. About 18 or 20 feet. We run the tower up something like 18 feet. We would increase the height of the tower with each story and move our buckets up.

Q. 37. Suppose you were pouring the concrete on the fourth floor, do you mean that the tower would run 18 feet above that floor?

A. Yes, something like that, 15 to 16 feet. You understand me there about the tower, I don't mean the hopper was that high. I mean the tower would run up that high.

Q. 38. Did Mr. Arthur L. Smith about the time this building was being constructed, ever say anything to you about the use of any chutes or troughs for the distribution of any concrete?

A. Not that I ever heard of. I don't remember him mentioning it.

[fol. 51] Q. 39. Did Mr. Smith ever talk to you about the use of troughs for the distribution of concrete?

A. At that time?

Q. 40. At any time?

A. No, not until here a short time ago I saw him and he was talking to me about it. That has been less than a year ago. No, he never said anything to me about distributing concrete in chutes.

Q. 41. Did he come to see whether you would remember whether he had used troughs or not?

A. Yes.

Q. 42. And you told him you did not remember it?

A. I told him I didn't remember him ever using any troughs at all.

Cross-examination by Mr. Smith:

X Q. 43. When you were employed by Mr. E. Tatterson were you stationed at the Fairfax Hotel?

A. Yes, I was stationed at the Fairfax Hotel.

X Q. 44. Your job was to supervise the concrete work on that building?

A. No, I was on all jobs, Miller-Rhoads & Swartz, Paul-Gale and the Fairfax Hotel. Those were the jobs that I put my time mostly in on, those three jobs.

X Q. 45. Did you have charge of the work on the Paul-Gale Greenwood Building?

A. Yes, sir.

X Q. 46. Wasn't it a fact that Arthur L. Smith was in charge of the work on the Lynnhaven Hotel?

A. He was in charge of it, yes, sir. He was foreman on the job.

[fol. 52] X Q. 47. Weren't you employed particularly for work on these other buildings and not on the Lynnhaven Hotel?

A. No, I had charge of all of Tatterson's work. I would superintend it. I would go on a job and Mr. Tatterson would ask me to look after anything he wanted done. Mr. Tatterson would ask me to go on a job and I would look after it.

X Q. 48. Were these other buildings which you have mentioned under construction at the same time that the Lynnhaven Hotel was being built?

A. Yes, sir.

X Q. 49. You made occasional visits to the Lynnhaven Hotel?

A. Yes, occasional visits to the Lynnhaven Hotel.

X Q. 50. You have stated on direct examination that troughs could not have been used in laying the cement on the fourth to the seventh floors without you having seen them, but it is possible, isn't it, that troughs might have been used for parts of those floors without you having seen them?

A. He might have used them for part of it. Yes, he might have done it but I never did see him use any troughs.

X Q. 51. In the construction of the tower and the mounting of the hopper, what is your recollection as to the scheme of extending that up? Was the hopper adjustable and would it move upwardly?

A. Yes, the hopper was molded on to the tower and you would have to have the hopper up to use that spout. You would have to have the hopper something like 20 feet above the floor.

X Q. 52. It would have been an easy matter to move this hopper upwardly enough to enable you to use the spout?

[fol. 53] A. Well, a man might have moved it up but it would take quite a time to move it. It would take a half day to move that and lower it.

X Q. 53. You mean even if the tower was already built?

A. Yes, the tower was already built, but when you move up your hopper you have to take your bolts all out, raise that up and then lower it back.

X Q. 54. What has been your work since 1906? Have you been interested in concrete construction?

A. Yes, sir.

X Q. 55. You have been on a good many other jobs since that time?

A. I have been on a good many jobs since that time.

X Q. 56. What enables you to recall the facts in connection with this particular Lynnhaven Hotel job; way back in 1906?

A. Well, by being asked, you know, being on the job and a man would come and ask me, you know. We were all interested in concrete work at the time, you know, and anything new, any new system in handling concrete, we were interested in it and we would try to catch on to it.

X Q. 57. That particular Lynnhaven Hotel job was only one of a large number that you were interested in at that time?

A. Yes.

X Q. 58. Did you know a man by the name of R. B. Preston who was connected with it?

A. Yes, I know Mr. Preston.

X Q. 59. Was he employed in connection with the Lynnhaven Hotel?

[fol. 54] A. I think he was their superintendent on the job for a while. Yes, I know he was. I don't remember exactly how long he was there.

X Q. 60. Did you know a son of Mr. E. Tatterson, a man by the name of Townley Tatterson?

A. Yes, sir.

X Q. 61. What was his capacity in connection with the Lynnhaven Hotel work?

A. I don't know. I don't know what he did in the Lynnhaven Hotel. He kept time for me for a month or two on the Fairfax Hotel.

X Q. 62. Was that before or after the construction of the Lynnhaven Hotel?

A. During the construction of the Lynnhaven Hotel that he kept time for me and he left there and went to school, when he went off to school that fall.

Redirect examination by Mr. Anderson:

R. D. Q. 63. Was Tatterson keeping time for you on the Fairfax Building when he left to go off to school, do you remember?

A. I don't think he was. I don't remember, but Townley kept time for me and came home from school that spring. His father told me to take him and see if I could make him work and keep time. I worried with him for a good while and couldn't do much with him, so I told him I would keep the time myself rather than fool about it. I used to have to hunt him up every time I would want anything and it took about a half hour to find him.

R. D. Q. 64. I didn't ask you a while ago, Mr. Baker, when I showed you this Exhibit 20 whether or not you were familiar with drawings? Are you familiar with drawings?

[fol. 55] A. Yes, sir.

R. D. Q. 65. And have no difficulty in reading them?

A. Yes, sir, I have been reading drawings for the last twenty-five or thirty years.

R. D. Q. 66. Mr. Smith has testified that during part of the time he used as many as three of these troughs, two of which are shown here and are marked 4 and 5, and, as I remember it, it has been testified that these troughs were from 10 to 14 feet in length which would mean that if they were used the radius of the area around the mouth of the hopper would be about 30 feet. Do you think it would have been possible for Mr. Smith to have used a trough for laying that much concrete on the floors four to seven without your having seen it?

A. No, I don't hardly think it would.

R. D. Q. 67. I show you a pencil sketch which is attached to an affidavit of Andrew J. Kerns, made by him in this case, which was executed the 23rd day of August, 1920, and will ask you to state how the construction of the hopper shown in this drawing at 3 compares with the hopper which was used during the construction of the Lynnhaven Hotel, just in general appearance?

A. That looks something like the hoppers we use on all buildings. That is practically the same thing. He has a wheel barrow drawn to run under that. That is just about like the ones we used on all

the jobs that we were doing at the time. He used such an arrangement.

R. D. Q. 68. Was that a wooden hopper or what kind of a hopper?

A. A wooden hopper, yes, sir. This hopper that was fastened on to the tower was a wooden hopper and the automatic dumper was [fol. 56] metal or sheet iron. That is the one that conveyed from the mixer to this hopper. It was a metal bucket and this was a wooden hopper.

R. D. Q. 69. And that metal bucket automatically dumped out into the hopper; is that so?

A. Yes.

R. D. Q. 70. Did they use a door similar to this door 4 here for permitting the concrete to be discharged from the hopper.

A. Yes, sir, he had a door here and a man here to handle that door with a lever, to raise that up and dump a wheel barrow full and cut the concrete out there.

R. D. Q. 71. Was there some man standing there to operate that lever?

A. A man to operate that lever.

R. D. Q. 72. You mean the lever 5?

A. Yes, this lever here that operates this door. There was a man there to operate that lever to dump the concrete into the wheel barrows.

R. D. Q. 73. And according to your recollection then that is a substantially correct rough drawing of what was used on that building?

A. It is my recollection that was what was used every time I was on the job.

Mr. Anderson: The Notary is requested to mark the sketch referred to by the witness for identification Plaintiffs' Exhibit Kerns' Sketch.

Signature waived by agreement of counsel.

WALTER NEWSOM THORNTON, being first duly sworn, testified on behalf of the plaintiffs as follows:

Examined by Mr. Anderson:

[fol. 57] Q. 1. What is your name, age, residence and occupation?

A. Walter Newsom Thornton; age 52; residence, Norfolk, Virginia; occupation, plumbing and heating engineer.

Q. 2. How long have you been engaged in that business, Mr. Thornton?

A. As near as I can remember, about thirty some years, I guess.

Q. 3. Did you have anything to do with the construction of the Lynnhaven Hotel?

A. Yes, sir.

Q. 4. Just what?

A. Just the plumbing.

Q. 5. Do you know who was the contractor for that building?

A. Mr. Tatterson, E. Tatterson.

Q. 6. Do you remember who was the superintendent or foreman in charge of the work on the building?

A. To my remembrance it was Mr. Baker, general superintendent, as near as I can come to it.

Q. 7. He was the general superintendent for Mr. Tatterson?

A. He was looking after all the buildings, if that is what you have reference to.

Q. 8. Who had charge of that particular building?

A. Mr. Smith. I don't know his initials.

Q. 9. Do you remember when that building was constructed?

A. It was just before the exposition, as near as I can come to it.

Q. 10. And that was when? 1907?

A. When was the exposition? I don't know.

[fol. 58] Q. 11. 1907?

A. 1907, I believe.

Q. 12. To what extent did your work require you to visit the building?

A. It required me every day because I had probably six or seven men or maybe more working on the building and, furthermore, it required my attention in regard to the pipes coming through the floors as they were pouring concrete. I had to see the men put boxes in, little forms to take care of my work to pass up through without cutting the concrete.

Q. 13. Does that mean that you got right up on the different floors of the building as they were being constructed?

A. Yes, sir.

Q. 14. And were all the floors made of concrete?

A. Yes, sir.

Q. 15. Do you remember how that concrete was distributed to the different floors?

A. I think so, yes, sir.

Q. 16. What is your recollection as to that now?

A. My recollection is it was distributed in wheel barrows.

Q. 17. From what point was it carried in wheel barrows?

A. From a shaft that was put up on the north side or on Freemason Street, the north side of the building. It was brought up in an elevator and dumped into a chute or dumped into a hopper, rather, and the hopper had a mouth to it and they brought the wheel barrow under the mouth of this hopper and they would open a little slide and it would fill the wheel barrow and they would shut it off.
[fol. 59] Q. 18. From that point the men pushed the wheel barrow to wherever they wanted to deposit the concrete; is that right?

A. Yes.

Q. 19. Did you see them doing that?

A. Yes, sir.

Q. 20. Did you ever see them distributing the concrete in any other way on that building?

A. No, sir, I did not.

Q. 21. Were you working in connection with that building from the time it started until it was finished?

A. Yes, sir, from the foundation up to the finished roof, finished inside.

Q. 22. And as I understand, you had charge of the plumbing?

A. Plumbing end of it, yes, sir.

Q. 23. What is your recollection as to the time of year the concrete was poured on the different floors of that building?

A. Our summers and winters are so much alike, if I had known that question was going to be asked me I might have given it more thought. That question has never been asked me before in regard to what I have already made a statement, but it strikes me it was during—somewhere around March, I guess. I give that up. I don't know. I rather think it was in March.

Q. 24. Are you familiar with the reading of drawings?

A. I think so, yes, sir.

Q. 25. Mr. Smith has testified that during the construction of the floors from the fourth to the seventh of this building that he [fol. 60] used troughs or chutes such as are shown in this drawing, Defendants' Exhibit 20, and will ask you if you remember ever seeing anything like that used for the distribution of concrete during the construction of this building?

A. No, sir, not at all.

Q. 26. If such troughs or chutes were used they would have covered an area of approximately 30 feet radius, using the mouth of the hopper as a center. Do you think it would have been possible to have used a trough like this for depositing that much concrete on these floors four to seven without you having seen it?

A. It would look so, yes, sir, that it would be impossible for them to use it without my seeing something similar to that. I would have seen it because I was on the floors every day.

Q. 27. I show you another drawing or sketch here which is marked Plaintiffs' Exhibit Kerns' Sketch, and I will ask you how the hopper which is shown in this drawing compares with the general shape and appearance of the hopper which was employed during the construction of that building?

A. That looks very much like the construction of the hopper and elevator. It looks very much like it. It was something similar to that, very much.

Q. 28. Where was the concrete mixed that was used on these floors?

A. It was mixed at the foot of the elevator.

Q. 29. That was on Freemason Street?

A. Yes, sir.

Q. 30. And then it was carried up in a bucket and discharged in the hopper; is that right?

A. Yes, sir.

[fol. 61] Q. 31. And then from the hopper into the wheel barrows; is that right?

A. Into the wheel barrows, yes, sir.

Q. 32. And what is your recollection as to the height of this hopper above the floor where the concrete was being laid, I suppose you would call it?

A. Do you mean from the floor that it was being poured on to the height of the elevator or chute?

Q. 33. No, I mean how high was the hopper, the mouth of the hopper above the floor that was being poured?

A. I judge probably about three feet, as near as I can remember it, just so a wheel barrow could go under there.

Q. 34. What is your recollection as to the height that this tower or frame went up above the level of the floor that was being poured?

A. I should say in the neighborhood of 10 or 12 feet, as near as I can remember.

Cross-examination by Mr. Smith:

X Q. 35. At the time that the Lynnhaven Hotel was constructed were you engaged on plumbing work in other buildings?

A. Yes, sir.

X Q. 36. Were these reinforced concrete buildings?

A. Yes, sir.

X Q. 37. Did you go around from one building to another at that time?

A. Yes, sir.

X Q. 38. About how often do you suppose you visited the Lynnhaven Hotel Building?

[fol. 62] A. I visited the Lynnhaven every day.

X Q. 39. What was the practice at that time with reference to the location of the pipes that you were putting in? Were they grouped together in some part of the building?

A. They were all over the building, all around.

X Q. 40. Distributed around in the walls?

A. Yes, sir.

X Q. 41. What was your duty when you went down there?

A. To see that all the places had boxes put in or forms, as we call them, so our pipes would go through and they wouldn't pour concrete in those places so when they take the boards from underneath we would have a free hole to go through without cutting the concrete because nine times out of ten they would always put the iron right where the holes come and we always had to make provision for our pipes to run up as straight as we possibly could.

X Q. 42. Were these boxes made and installed by you?

A. By my men, yes, sir.

X Q. 43. Your men could make these boxes and install them without your being there?

A. Nine times out of ten I would lay them off because sometimes they would get them a little bit out of plumb or something of that kind and I would take the plans and go over the plans and put them down as they would be pouring the concrete and get them straight on that score before I would go away from the building.

X Q. 44. Did you do all of that work personally or did some of your men do it?

A. My men did most of the work. I was superintending it, looking after it, and I would probably make a couple of visits there during the day.

[fol. 63] X Q. 45. You weren't actually present all the time when these boxes were being located and the cement being poured?

A. Well, I would generally stay around. When they would pour a floor I would generally look after the floor particularly because when they would pour it on one floor today they wouldn't pour it on the other work. It would have to stand and wait some time.

X Q. 46. Do I understand that is your general practice or is that what you did at that time in 1906?

A. In all the buildings that Mr. Tatterson was building, that were being constructed pretty much at the same time, he would take a force of men off of one job, as near as I can remember, and carry them to the other when they got ready to pour the floors.

X Q. 47. When you were on the job at this Lynnhaven Hotel Building you were located at the place where the cement was being laid and not at the place where it was being elevated from the ground?

A. Of course, I would be first probably up on the building on the roof and then I would be downstairs, back and forth, because I had men working all over the building from top to bottom. They were working all over it.

X Q. 48. During the past 15 years have you been engaged in plumbing business?

A. I have been engaged in the plumbing business for the last 30 years.

X Q. 49. Has anything happened during the last 15 years to refresh your memory, particularly about the Lynnhaven Hotel work?

A. No, nothing to refresh it that I know of.

X Q. 50. How are you able to recall particularly what happened on that particular job?

[fol. 64] A. There ain't but one thing that I have known particularly that happened and that is one of the floors gave way where the concrete had just been poured on it and it broke through. That is about the only thing that I know of.

X Q. 51. Do you remember anything about the consistency of the cement that was used there? Was it in a liquid condition so it would flow freely?

A. Well, I suppose to pour concrete it would have to be in kind of a liquid state in a way, soft so it would be easily distributed over the floor.

X Q. 52. What experience have you had in reading drawings?

A. Well, I have been doing it for the last 35 years.

X Q. 53. When you were asked by Mr. Anderson you said "I think I can."

A. I wouldn't like to say that I know all about it but I don't think there is anybody that would—

X Q. 54. I hand you this drawing, which is Defendant's Exhibit

20, of the Lynnhaven Hotel apparatus, and I ask you to explain what you understand to be shown there?

A. Well, of course, this being the elevator, what I would term to be an elevator. This is what brings up the concrete. When it gets up to this point here it is dumped into this box, trough or anything you want to call it on a sketch of this kind. He brought it in this way and would chute it back that way or this thing could be turned around and chute this way instead of chuting it straight out. I don't know what else you want me to explain about this, this being a rope down here holding this part of the box or chute or whatever you may term it.

[fol. 65] X Q. 55. That is all right. I just wanted to see whether you understand it or not. You say that you were on the Lynnhaven Hotel job all the time from start to finish; that is you were there supervising the work at intervals?

A. Yes, sir. I don't think I missed a day excepting Sundays.

Redirect examination by Mr. Anderson:

R. D. Q. 56. At the time this Lynnhaven Hotel Building was constructed had you had any previous connection or work with buildings constructed of concrete?

A. Yes, sir.

R. D. Q. 57. Where you at that time familiar with the consistency of the concrete as used in pouring it on the different floors or foundations?

A. You mean the quantity that was mixed, sand and cement?

R. D. Q. 58. I mean as to its liquid condition?

A. Yes, sir.

R. D. Q. 59. You were familiar with it at that time?

A. I only know they made a soft mixture so it would be distributed easily and when they would pour it it would seek its own level.

R. D. Q. 60. Did you notice any difference between the concrete which was used by Mr. Smith on the Lynnhaven Building and the concrete which was used on other buildings?

A. No, sir.

R. D. Q. 61. No difference whatever?

A. I didn't see any, no, sir.

R. D. Q. 62. The same consistency?

[fol. 66] A. Yes, sir. I couldn't tell what ingredients he put into it or anything of that kind.

R. D. Q. 63. Do you know Andrew J. Kerns?

A. Yes, sir.

R. D. Q. 64. How long have you known him?

A. I couldn't say particularly. I knew him before he went to the Lynnhaven Hotel.

R. D. Q. 65. Was he employed on the Lynnhaven Hotel Building?

A. Yes, sir.

R. D. Q. 66. What is your recollection as to the length of time he was on that building?

A. I wouldn't like to say but it strikes me that he was there the whole time.

R. D. Q. 67. Do you happen to recall what he did about the building there?

A. Yes, sir. I think he looked after the man who poured the concrete.

R. D. Q. 68. Did you see him on the building?

A. Yes, sir.

R. D. Q. 69. And that is your recollection?

A. That is my recollection, yes, sir.

Recross-examination by Mr. Smith:

R. X Q. 70. Do you remember any other men who were on the job there?

A. Yes, sir.

R. X Q. 71. Do you remember Mr. Arthur L. Smith?

A. Yes, sir.

R. X Q. 72. What was his position?

A. He seemed to be foreman, what we would call foreman of the construction.

[fol. 67] R. X Q. 73. He was in charge of the concrete construction?

A. I don't know whether you would call it that. He was in charge of the whole building in a way.

R. X Q. 74. Do you know a man by the name of R. B. Preston?

A. I don't say I do.

R. X Q. 75. You couldn't remember whether there was any such man connected with the Lynnhaven Hotel job?

A. No, sir, I do not.

R. X Q. 76. Did you know a man by the name of Townley A. Tatterson?

A. I know Mr. Tatterson, yes sir.

R. X Q. 77. Do you remember whether he was connected with the Lynnhaven Hotel job?

A. It was seldom I ever seen him around. He might have been but it was very seldom I ever seen him.

R. X Q. 78. You are quite positive that you never saw any troughs or chutes used for distributing cement there?

A. I am positive I never saw them.

Signature waived by agreement of counsel.

ROLAND BRINKLEY, being first duly sworn, testified on behalf of the plaintiffs as follows:

Examined by Mr. Anderson:

Q. 1. State your name, age, residence and occupation?

A. Roland Brinkley; age 43; contractor, Norfolk, Virginia.

Q. 2. With what firm or company are you connected, Mr. Brinkley?

A. Baker-Brinkley Company.

[fol. 68] Q. 3. How long have you and Mr. Baker been in business together?

A. About twelve years, I think, or something like that.

Q. 4. What was your business prior to the time that you and Mr. Baker went in business together?

A. The same line of business, contracting with Mr. Abrams.

Q. 5. Were you ever in the employ of Mr. E. Tatterson?

A. Yes, sir.

Q. 6. Do you remember when the Lynnhaven Hotel Building was constructed?

A. Yes, sir.

Q. 7. Were you in his employ at that time?

A. Yes, sir.

Q. 8. In what capacity?

A. Office manager.

Q. 9. Did you have anything to do with time?

A. No sir, only figuring it in the office. You mean keeping it?

Q. 10. Yes, keeping time?

A. No.

Q. 11. You kept charge of it in the office, did you not? The time?

A. Figured it out, yes, sir.

Q. 12. During the time this building was under construction did you have occasion to visit it at any time?

A. Oh, yes, occasionally I would go up there.

Q. 13. How often would you say?

A. I should say about once a week.

[fol. 69] Q. 14. Were you ever up on the different floors of the building during the construction?

A. No, I don't think so.

Q. 15. You were not?

A. I had no occasion to go up on the upper floors.

Q. 16. Have you any knowledge as to the manner in which the concrete which was used in the construction of this building was distributed?

A. No, I can't say that I have. Of course, when I was going up there there was a hoist and whether it was distributed in spouts or wheel barrows, I couldn't possibly say.

Q. 17. You don't know?

A. I don't know. It wasn't my business to know.

Q. 18. Did you at that time hear anyone say anything about the use of spouts or troughs for the distribution of the concrete?

A. I did not.

Q. 19. Nobody mentioned it to you at that time?

A. No, sir.

(No cross-examination.)

Signature waived by agreement of counsel.

F. M. GLINES, being first duly sworn, testified on behalf of the plaintiffs as follows:

Examined by Mr. Anderson:

Q. 1. State your name, age, residence and occupation?

A. Fred M. Glines; age 41; residence, Tazewell Building, Norfolk, Virginia; occupation, structural engineer.

Q. 2. Where are you now employed, Mr. Glines?

A. Peebles & Ferguson, Architects.

[fol. 70] Q. 3. How long have you been in their employ?

A. Going on 21 years, I guess.

Q. 4. Do you remember when the Lynnhaven Hotel Building was constructed?

A. Well, it was beginning the latter part of 1906, completed along in 1907.

Q. 5. Who were the architects for that building?

A. John Kevan Peebles.

Q. 6. Did you have anything to do with the preparation of the drawings?

A. Well I had general superintendence of them all, practically, except the interior design.

Q. 7. How do you fix the date when the building was built?

A. From my recollection I knew that it had to be completed by the time the Exposition was opened and the dates on our drawings which are dated 1906.

Q. 8. Do you remember about when they were finished, those drawings?

A. You can't tell exactly when they were all finished because they were different months, but they were finished during June, July and August.

Q. 9. What, if anything, did you have to do in connection with this building during its construction?

A. I designed the reinforced concrete frame and naturally during the construction I would go on the job very nearly every day and go over it to see if they were carrying the steel out right and setting the steel and getting the proper thickness and proper sizes of the concrete members.

Q. 10. What is your recollection as to the manner in which the concrete was distributed to the different floors?

[fol. 71] A. Well, the concrete was distributed, from my recollection, in wheel barrows.

Q. 11. Do you recall whether or not any chutes or troughs were used for distributing it from the hopper to the different points on the floor?

A. Not in a general way. The reason that I remember particularly that wheel barrows were used on the floor, that is a flat slab construction, built between girders, not the up-to-date slab construction. Of course, that necessarily had the forming all flat with depressions for the girders. On top of that wood forming the electricians come along and put their conduits before they poured the

concrete. By wheeling these wheel barrows over it they would knock these conduits out of position all the time and the electricians were up in the air, you might say, for misplacing the conduits. They would have the conduits around on the floor and probably wire nails turned over to hold them in position and the wheel barrows would slip off the planking and knock the conduits all out of place and—I don't call it a spout. I call it a trough right next to the elevator where the bucket comes up. They had a hopper built out there, a bucket, and in the building they would use, where they couldn't get the wheel barrows around, a trough to go around that end.

Q. 12. You mean immediately around the discharge end of the hopper?

A. Yes.

Q. 13. Almost underneath it?

A. Very near underneath it, within a space of where they were closing up.

Q. 14. I show you a pencil sketch marked for identification Plaintiffs' Exhibit Kerns' Sketch and will ask you how the construction [fol. 72] of the hopper as actually employed on this building compared with the construction of the hopper which is indicated in this sketch?

A. That is practically about what they had. Of course, I couldn't go into the construction of it and size of the members but that is just about what they had. This is what I call a hopper hanging over the side here.

Q. 15. 3; is that what you mean?

A. Yes.

Q. 16. About how high from the floor was the mouth of the hopper? About how high from the floor was the lower side or lower end of the hopper?

A. Well, I should say that probably was about four feet.

Q. 17. Just high enough for the wheel barrows to get conveniently underneath?

A. Yes. You see this whole arrangement (pointing to side elevation marked "A")—at any time during the construction as they got from floor to floor, the very topmost height here wasn't more than 9 or 10 feet. In other words, this would probably be up about one story high all the time.

Q. 18. That is, you mean that the frame or tower or elevator in which the hoist bucket was elevated extended about 10 feet above the floor level of the floor which was being constructed?

A. Yes, sir, never any higher than that unless they would have a gang of workmen going along here probably beginning on the next floor, in the construction of the tower, but they wouldn't begin that until they had their forming all up a story higher.

[fol. 73] Q. 19. I show you another sketch or drawing marked Defendants' Exhibit 20 and will ask you if you have any recollection of ever having seen a structure such as is shown in that drawing employed for the distribution of the concrete on the Lynnhaven Hotel Building?

A. No, sir, I never did.

Q. 20. Did you know Mr. Arthur L. Smith who was foreman on that building?

A. I knew of him as coming down as foreman for Mr. Tatterson.

Q. 21. Do you remember seeing him on your different visits to this building?

A. Yes, I saw him on that building and the building across the street, the Main Line Realty Company Building. He also started putting that up at the same time this construction was going on.

Q. 22. Is that known as the Vinery Building?

A. The Vinery Building, yes, sir.

Q. 23. For the sake of the record, will you please state what you understand this drawing, Defendants' Exhibit 20, to be?

A. Well, I understand that to be a tower. There are no dimensions shown on it. It is a tower and troughs. That tower, in my estimation, would have to be, according to this sketch, about 25 or 30 feet above that floor and I don't have any recollection of seeing anything on the job of that character at all.

Q. 24. Suppose the elevator tower extends only about 10 feet above the floor level of the floor on which the concrete was being poured, could you use troughs of that kind for chuting out the concrete for a distance of 20 to 30 feet?

[fol. 74] A. You couldn't possibly do that because your troughs would have to be underneath your hopper and that wouldn't give you any slope from the bottom of the hopper to the top of your pouring?

Q. 25. And you don't recall ever having seen the hopper situated more than about 3 or 4 feet above the floor level?

A. No, sir, the bottom part of it.

Q. 26. Have you any distinct recollection of having seen the men rolling their wheel barrows underneath the hopper and receiving from it the concrete and then pushing them off to the different points where it was to be poured?

A. Yes, that was the general arrangement that they had up there. One negro right after another would go with a wheel barrow up to the hopper and get concrete. As I say, my recollection is they went off on planks to the different places where it was disposed.

Q. 27. Mr. Smith has testified that this arrangement as shown in Defendants' Exhibit 20 was employed from the fourth to the seventh floors of the Lynnhaven Building, which would mean that the concrete was poured thereby over a radius of about 20 to 30 feet from the mouth of the hopper as a center. Do you think it would have been possible for him to have employed that apparatus that extensively without your having noticed it?

A. If he had had an apparatus out there I certainly would have noticed it because it would have been something new at that time.

Q. 28. I believe chutes or pipes are now employed for the distribution of concrete to rather a large extent in the construction of concrete buildings, are they not?

[fol. 75] A. They are now, yes, sir.

Q. 29. Do you remember about how long ago it was that such chutes came into use, within your knowledge?

A. Well, of course, at different times. You take, probably, for instance, when this building was going on and a little later I would see illustrations of chutes used.

Q. 30. I mean since you have seen them?

A. It hasn't been up to about four or five years ago that I have seen them in actual use.

Cross-examination by Mr. Smith:

X. Q. 31. How often did you visit the Lynnhaven Hotel when it was being constructed?

A. Probably when they first began putting up the forming and pouring the concrete I was probably there every day and some days probably twice.

X. Q. 32. And during all the time the concrete was being poured?

A. Not continuously, you understand. I might be up there—yes, every day from the first floor to the roof. As I said before, this is about the second reinforced concrete building that we had built, this one here that we are in first and the building up in Roanoke was the second and the Lynnhaven and Vinery come in for about the third and fourth and, of course, I was interested in them and watching them very closely.

X. Q. 33. What was your purpose in going around?

A. I designed the construction and I wanted to see if it was being carried out properly. Then, of course, all the work was new to all of us and we watched it going along. I wasn't employed as superintendent on the job although I had a right to go on and correct things if I found they weren't doing it properly.

[fol. 76] X. Q. 34. Did you always go up to the top floor that was under construction or merely go around and look things over generally?

A. I would go around and look things over generally. Of course, I was on every floor as they went up. Take, for instance, when they are building a building like that and getting out the plans, after the building is up and construction going on, they will want to make different changes, take out a member here and there and I would have to go up and look matters over like that.

X. Q. 35. Your duties didn't require you to go up and actually look at the cement being poured or distributed?

A. Well, my duties went as far as I wanted to take advantage of them. If I wanted to leave the office and go up there and look at it, I had a right to do so.

X. Q. 36. Do you recall how the tower and hopper were constructed on that building?

A. Constructed out of wood and braced. The bucket, I think, was a metal bucket, probably put together with sheet iron and rivets and all the other parts were wood, bolted, probably, or spiked.

X. Q. 37. You don't recall how the hopper was bolted in the tower?

A. I don't think the hopper was mounted in the tower at all. It was mounted on the outside.

X Q. 38. On the side, of course. You said on direct examination that some form of trough or chute was used in a certain part of the construction. Do you recall just what that construction was?

A. Well, it was a wooden trough used in a radius from the concrete mixer perhaps from 16 to 18 feet, used in closing up the concrete at the elevator.

[fol. 77] X Q. 39. You don't recall whether there were any other troughs used?

A. No sir.

X Q. 40. You never saw more than one trough extended out from the hopper?

A. No. Of course, I call that a trough but a trough like they are spoken of now in these days means a trough that is put up in sections, hung up 25 or 30 feet in the air, probably. It all depends on the distance they are going with the trough.

X Q. 41. We are talking about the particular thing that you saw over there?

A. This trough up there wasn't any more than two sections but they weren't troughing any more than 16 or 18 feet.

X Q. 42. Do you recall how the trough was supported?

A. Well, they probably had it blocked up. It was blocked up at the hopper.

X Q. 43. What do you mean by "blocked up"?

A. Put on horses or blocks, nailed together, two legs on a block.

X Q. 44. Do you recall whether it was suspended at all by a cable or anything of that sort?

A. No, it was just laid on supports on the floor. After they got to pouring the concrete toward the elevator, of course the niggers would hold the end of it themselves.

Redirect examination by Mr. Anderson:

R. D. Q. 45. Did you have anything to do with the Vinery Building?

A. What I did at the Vinery Building was practically the same as at the Lynnhaven Hotel.

[fol. 78] R. D. Q. 46. Do you remember the use of troughs or chutes such as are shown in Exhibit 20 being used on that building?

A. No, sir, I do not.

Signature waived by agreement of counsel.

CARTER GAY (col.), being first duly sworn, testified on behalf of the plaintiffs as follows:

Examined by Mr. Anderson:

Q. 1. State your name, age, residence and occupation?

A. Carter Gay; age 61; Norfolk, Virginia; occupation, drayman.

Q. 2. Did you ever work on the Lynnhaven Hotel Building?

A. Yes, sir.

Q. 3. What did you do there?

A. I was kind of a foreman over the hod carriers and concrete and so on like that.

Q. 4. Was that a concrete building?

A. Yes, sir.

Q. 5. What did you have to do with the pouring or spreading of the concrete?

A. I was around there and seen that it was done and seen that the work was carried on.

Q. 6. Were you there when they began working on the building?

A. Yes, sir.

Q. 7. Did you continue to work on the building until they finished the concrete work?

A. Yes, sir.

[fol. 79] Q. 8. Can you tell us just how the concrete was handled, just how it was handled on the building?

A. That was handled in wheel barrows that come up to the hopper and then poured out into the wheel barrows and the wheel barrows carried it around where it had to be dumped at until they got up so close where they would come up there and then they would take it and pull it around to different places with shovels and all such things as that.

Q. 9. You mean right around near the mouth of the hopper?

A. That is right, sir.

Q. 10. Was this concrete mixed down at the bottom of the tower or hoist?

A. Yes, sir, down at the bottom.

Q. 11. And carried up to the top in buckets?

A. Yes, sir.

Q. 12. And then it was dumped from the bucket into the hopper?

A. Yes, sir.

Q. 13. Just what work did you do? Tell up as nearly as you can just what work you did on the different floors?

A. On the different floors I stayed around there and assisted them around and sometimes when a man would be out I would catch hold of a wheel barrow and carry it around myself. I didn't have special work like that. I was kind of overseeing the work among the hod carriers.

Q. 14. You saw just what the men did?

A. I saw just what the men did.

Q. 15. You say you were on that job until they finished pouring the concrete?

A. Yes, sir.

[fol. 80] Q. 16. From the top to the bottom floor?

A. Yes, sir.

Q. 17. Did you ever see them using these troughs or chutes for pouring that hot concrete on that building?

A. Chutes?

Q. 18. Troughs or chutes?

A. No, sir, there weren't none used.

Q. 19. Then it is your recollection that all of the concrete around on the different floors except that right at the top was hauled around by wheel barrows?

A. It is certainly so, yes, sir.

Q. 20. Do you remember whether that building was put up before or after the Jamestown Exposition?

A. Well, that kind of slipped my recollection about that. I don't know exactly what year that was.

Q. 21. Not about the year; was it before or after the Exposition?

A. It was before.

Q. 22. Do you remember the name of the superintendent or foreman on that building, the general foreman?

A. Smith, I believe his name was. I think his name is Smith.

Q. 23. You never saw him using any troughs or chutes for pouring the concrete, did you?

A. No, sir.

Cross-examination by Mr. Smith:

X Q. 24. How do you happen to know that this building was put up before the Exposition? How do you remember the date?

A. I can't remember the date but then I think it was before the exhibition. I know it was.

[fol. 81] X Q. 25. What have you been doing since that time?

A. Well, I carried hood a good bit and worked around for different contractors here and then I went to dryving just as I am now, after that.

X Q. 26. Have you worked on any other concrete buildings since?

A. Oh, yes, sir, worked on several of them.

X Q. 27. How do you happen to remember what was done when they put up that hotel?

A. Well, because I hadn't worked no other way except with wheel barrows at that time. There wasn't no chutes and things then as I know anything about. I quit working around with contractors when the chutes come around.

X Q. 28. Was that the first concrete job you worked on?

A. No, sir, it wasn't the first one I worked on.

X Q. 29. When you were around that job there were you always on the floor when the cement was being poured and laid?

A. Yes, sir, principally always on the floor.

X Q. 30. Were any other men there who had jobs like you had?

A. No, sir, didn't any other one have exactly the job I had because I was kind of foreman in the work and waiting on the different men, you know, and the rest of them had certain work, was assigned to a wheel barrow and when their turn come they had to take their wheel barrow and go on off, and if any man was out I would send his wheel barrow at the same time.

X Q. 31. How long did you work there on that hotel job?

A. I worked there—well, I guess it was over a year before it was completed before I left there.

[fol. 82] X Q. 32. Were you there when they first begun to lay the cement?

A. Yes, sir.

X Q. 33. You don't remember what happened on any particular floors of the building? Do you remember whether they used the same scheme for distributing the cement on every floor?

A. On every floor.

X Q. 34. Do you remember anything about the construction of the tower and the hopper for elevating the cement?

A. No, I didn't know anything about it no more than I just knew it was there. Of course, I didn't have to work in that none to amount to anything. I just know it was there. I know about that.

X Q. 35. You were around on the floor where the wheel barrows were used, were you?

A. Yes, sir.

X Q. 36. When was this thing first brought to your mind, this matter of the construction of the hotel building?

A. When was it brought to my mind?

X Q. 37. Yes.

A. I just heard of it today.

X Q. 38. You just heard of it today?

A. Yes, sir.

X Q. 39. Who called your attention to it today?

A. Well, this Mr. Kerns was looking for me, I suppose. He happened to come across me and asked me and told me about it, told me about the Lynnhaven Hotel and asked me was I working there. He knew that because I was working there the same time he was.

[fol. 83] X Q. 40. Did anybody suggest any of these things to you at all?

A. No, sir, just more than told me was I working at the Lynnhaven Hotel and that he knew already.

X Q. 41. You don't remember seeing any chutes around there on the job?

A. No, sir, there weren't no chutes on that job.

X Q. 42. Were any chutes used at all even for a short time on that job?

A. No, sir, weren't no chutes used at all.

X Q. 43. You don't remember them at all?

A. No, sir.

Signature waived by agreement of counsel.

ANDREW J. KERNS, being first duly sworn, testified on behalf of the plaintiffs as follows:

Examined by Mr. Anderson:

Q. 1. State your name, age, residence and occupation?

A. Andrew J. Kerns; foreman, employed by H. K. Ferguson,

Cleveland, Ohio. My address is 3 East Cary Street, Richmond, Virginia; age 43.

Q. 2. What has been the character of your work with H. K. Ferguson?

A. General labor and concrete foreman.

Q. 3. Did you formerly work in Norfolk?

A. Yes, sir.

Q. 4. Were you employed in connection with the construction of the Lynnhaven Hotel?

A. Yes, sir.

Q. 5. Do you remember who contracted for that building?

[fol. 84] A. E. Tatterson.

Q. 6. Do you recall about when it was built?

A. It was started in the neighborhood of June, 1906.

Q. 7. About when was the construction work finished? I mean by that to exclude the furnishing and that sort of thing, putting it in condition to be occupied.

A. We finished pouring concrete in the neighborhood of December or January, 1907, but the building practically wasn't finished until, you might say—it was after March.

Q. 8. March, 1907?

A. Yes. I was taken off of there and put over on the Vinery when they were finishing pouring the roof.

Q. 9. Do you mean December, 1906, and January, 1907?

A. Yes, sir.

Q. 10. Did you start to work on this Lynnhaven Hotel Building at the time the work began?

A. Yes, yes, I started in there as fireman and engineer on the concrete mixer.

Q. 11. Where was that mixer located?

A. On Freemason Street about 100 yards from the corner of Granby.

Q. 12. Do you mean 100 yards or 100 feet?

A. 100 feet.

Q. 13. Go ahead and tell us in a general way from the very beginning what was the nature of your work on that building.

A. I went to Mr. Tatterson and told him I wanted a job to learn the concrete construction business and he told me I would have to start at the bottom. He had a man on the mixer and he couldn't keep steam so he put me over there. The mixer was down in the [fol. 85] ground and the hopper was level with the street, so I went over there and I succeeded in keeping steam and keeping the mixer going. Then he gave me charge of the two hoisting engines and the concrete mixer and from that I worked along and he put me up there then filing saws and from filing saws I got to learn how to read plans and Mr. Smith took me out and showed me how he wanted me to help him on the second floor, so I helped him at that time. On the fourth floor Mr. Metz was either discharged or left, I don't know which. He was a concrete foreman that came there. I was taken by Mr. Tatterson and by Mr. Smith and instructed to pour the concrete. He told me to bear in mind they wanted a

smooth job and a good solid job. Mr. Smith watched me all during my construction work and helped me out.

Q. 14. Were you made foreman of the concrete pouring part of the work?

A. Labor and concrete, yes, sir.

Q. 15. You refer to Mr. Smith. Do you mean Mr. Arthur L. Smith?

A. Arthur L. Smith, yes, sir.

Q. 16. What was his position in connection with that work?

A. Superintendent.

Q. 17. What is your recollection as to the date when you began working on the fourth floor or when you became concrete and labor foreman?

A. Somewhere in the neighborhood of July or August. I can't say positively which, that I was taken out and put out on that work. I had previously handled labor before; when I didn't have saws to file or such work as that I would go out and just assist them the best way I could and learn to handle the men.

[fol. 86] Q. 18. Do you think that you had reached as high as the fourth floor in this work by July or August?

A. I think it was along somewhere in the latter part of August or September that we had got in the neighborhood of the fourth floor.

Q. 19. Do you know Mr. R. B. Preston?

A. Yes, sir.

Q. 20. What did he have to do with that building, if you recall?

A. He was building inspector for the architect. He was to see that the steel was put in properly and that the concrete was placed properly.

Q. 21. Were you on the work there when he came on the job?

A. Yes, sir.

Q. 22. I don't suppose you remember about when he came, do you, or not?

A. I can't say positively that I can.

Q. 23. How long were you on that work? You started in at the beginning and how long were you on that job?

A. I was on and off of it practically until it was finished.

Q. 24. How was the concrete distributed or poured during the construction of this building?

A. By wheel barrows only.

Q. 25. Suppose you describe the operation, starting with the concrete down at the bottom of the tower and taking it right on up until it is distributed on the floor or in the forms on the floor, I guess you would call that?

A. The mixer was set in the ground, as I said before, and the mouth of the mixer had a lip which discharged into a bucket which [fol. 87] was set into a frame and the bucket lowered into a pit so that it would be below the mixer. By the aid of a cable and schieve wheel at the top of the tower, as far as it was built, we drawed the bucket up which discharged into a hopper which was closed at the end by a piece of steel called a gate, operated by hand, and when a man would come up with his wheel barrow and would go under

there he opened it and filled his wheel barrow and closed it and the man went to his destination with the concrete, and when he got in close range, that is where we couldn't handle the wheel barrow underneath the hopper, we would take up the platform, take down the stay prop and at times I did just take a long board and hold in front to help chute it back so we could save ourselves from pulling it so much, just take a plank and put it in that shape so it would hit and go underneath there (illustrating by a book) but no chutes were ever used at any time during my time on the job and I stayed there until I finished the roof and then I was sent over to the Vinery to dig out footers and pour the footers for the erection of the Vinery Building. Of course, if Mr. Smith wanted anything I would bring my laborers back to the Lynnhaven and finish what he wanted and go back again.

Q. 26. I show you Defendants' Exhibit 20 and will ask you if you recall ever having seen any such construction as is shown in that Exhibit employed in the distribution of the concrete on the Lynnhaven Hotel Building?

A. No, sir.

Q. 27. You referred a moment ago to the fact that the concrete was dumped from the hoist bucket into a hopper. How high was the bottom or mouth of this hopper from the floor which was being built at that time?

A. Three feet, just enough to let the wheel barrow come under. [fol. 88] Q. 28. I show you a sketch which is marked Plaintiffs' Exhibit Kerns Sketch, which is attached to an affidavit heretofore executed by you on the 23rd day of August, 1920, and will ask you if that sketch was made under your direction?

A. Yes, sir, it was.

Q. 29. Does that sketch represent in a general way your idea of the appearance of the hopper with a wheel barrow under the outer end of the hopper as they were employed during the construction of this building?

A. It is.

Q. 30. Was that hopper of metal or wood construction?

A. Wood, lined with tin or light steel metal so the concrete would slip out.

Q. 31. What is your recollection as to the height to which the hoisting tower was extended above the floor on which the concrete was being poured? For instance, suppose you were pouring concrete on the fifth floor, how high above the fifth floor did the hoisting tower extend?

A. In the neighborhood of 20 or 25 feet.

Q. 32. Was that the case in the Lynnhaven Hotel construction?

A. Yes, sir.

Q. 33. If chutes and troughs were not employed during that construction why did they run the hopper so high above the floor on which you were distributing the concrete?

A. To give the bucket leeway to travel up to come underneath the shieve—the cathead that come across. The hopper wasn't that high.

Q. 34. Arthur L. Smith has testified that troughs or chutes were

used similar to what are shown in Defendants' Exhibit 20 from the [fol. 89] fourth to the seventh floors of the Lynnhaven Hotel Building, and also that there were at times as many as three lengths of troughs used, which would mean perhaps that an area of a radius of 20 to 30 feet and perhaps greater would have been poured or distributed by means of troughs. Do you think it would have been possible for such troughs or chutes to have been used to that extent without your seeing them?

A. No, sir.

Q. 35. Were you ever discharged by Mr. Tatterson during the period that you were employed on this building?

A. Not on the Lynnhaven, no, sir.

Q. 36. And you were in the employ of Mr. Tatterson and working on this building continuously from the time it started until the constructional part of the work was completed; is that correct?

A. Yes, sir, except when Mr. Smith wanted me for any such thing such as to take a gang of men and clean out a place and move a lot of lumber and such stuff as that, I would take my men over from the Vinery and finish and go back.

Q. 37. Then you went over to the Vinery, did you, after the pouring of the concrete was completed on this building?

A. Yes, sir.

Q. 38. And before what you might call the finishing up work was done on the Lynnhaven; is that right?

A. Yes, sir.

Q. 39. Do you remember who was time keeper on this building in the early part of the work, say, up to December, 1906?

A. Joe Boere.

[fol. 90] Q. 40. Do you know Townley Tatterson?

A. Yes, sir.

Q. 41. Who is he?

A. He is the son of the contractor, E. Tatterson.

Q. 42. During this period that you have just mentioned was he employed on this building?

A. No, sir, he wasn't the early part of it.

Q. 43. I mean during the period up to say December, 1906?

A. No, sir.

Q. 44. Do you know anything about where he was employed in the summer of 1906 before he went off to college?

A. By Mr. Baker on the Fairfax and Paul-Gale-Greenwood Buildings.

Q. 45. Then he was not time keeper at any time during the summer or latter part of the summer of 1906?

A. No, sir.

Q. 46. Later on, say after the first of the year, 1907, beginning with February, do you know whether he was then employed on the Lynnhaven Building?

A. Yes, sir, he was employed there as time keeper.

Q. 47. Was that after he left college?

A. Yes, sir, after his father had wrote for him. Boere had got in bad and that is when his father sent for him.

Q. 48. How do you fix the time at or during which this building was built?

A. 1906?

Q. 49. Yes.

A. The way I come to recollect it, I know it was 1906 I had previously been employed by the Norfolk & Western.

[fol. 91] Q. 50. Was it before or after the Jamestown Exposition?

A. It was before then.

Q. 51. Was there any special effort being made to finish this building so as to have it ready for the visitors to the Exposition?

A. Every possible means. We were working night and day.

Q. 52. Do you know Mr. William T. Baker?

A. Yes, sir.

Q. 53. Do you know whether or not he was employed by Mr. Tatterson at the same time you were, 1906 and 1907?

A. He had been with Tatterson some time before I came with him.

Q. 54. Was he in his employ in 1906 and 1907?

A. Yes, sir.

Q. 55. Do you know in what capacity, what he was doing?

A. He was general superintendent and he was building the Fairfax and Paul-Gale-Greenwood Building the same time we were building the Lynnhaven.

Q. 56. Do you recall ever having seen him on the Lynnhaven Building during the time it was being constructed?

A. Yes, sir, I was sent by Mr. Tatterson down here to the Fairfax to get him once and we had occasion there of the floor giving way, the fifth floor.

Q. 57. By the way, did you have some sort of an accident while that building was being constructed?

A. Yes, sir, I was coming up with cement when the fifth floor gave way and then I had an accident just along about Christmas time.

[fol. 92] Q. 58. 1906?

A. 1906, by sticking two nails through my right foot.

Q. 59. Where did that happen, on the building?

A. Yes, sir.

Q. 60. What floor, do you recall?

A. In the neighborhood of the third or fourth floor.

Q. 61. At the time that happened how far along were you with the pouring of the concrete?

A. Well, the roof was done but we wasn't through pouring the last floor, that is the stairway. We always kept that. We never say we are through pouring until we are finished up.

Q. 62. But the floors had all been poured at that time?

A. The floors had been poured, yes, sir, but the concrete tower wasn't down nor the hopper wasn't down nor we hadn't taken any of our concrete tools from up there because we were finishing pouring the steps, pent houses, elevator shafts, and so on.

Q. 67. That is your recollection that all of the concrete used in the construction of this building was discharged from the hopper into wheel barrows, with the exception of that right around under-

neath the hopper, and was hauled by wheel barrows to different points on the different floors where it was deposited; is that correct?

A. It was, sir.

Q. 64. You said a while ago that you were also employed in the construction of the Vinery Building after you had finished the concrete work on the Lynnhaven Building. How was the concrete distributed in this building?

A. The same as the Lynnhaven, with wheel barrows only.

[fol. 93] Q. 65. No chutes or troughs used for conveying it from the hopper to different places on the floor level?

A. No, sir.

Q. 66. Mr. Smith in his testimony stated that the pouring of the concrete was finished in about three and one-half months. What is your recollection as to the period during which the concrete was being poured on the Lynnhaven Building?

A. I can't say for sure, absolutely right, but it was somewhere in that neighborhood. It may have been a little bit longer, but in finishing out, that is, pouring all the concrete and putting in all the finishing to the roof, we was a good deal longer than that.

Q. 67. How about the floors?

A. The floors was in.

Q. 68. In about three and one-half months?

A. In about three and one-half months. I will say four months to be sure.

Q. 69. I show you Defendants' Exhibit 19 and call your attention to the part or parts marked 2 and 3. What do you understand those parts to be in that photograph?

A. Part 3 is the mouth of the hopper, the handle to the spout where we was discharging into wheel barrows.

Q. 70. And what is 2?

A. 2 is the top of the frame that goes across to hold the top of the hopper together under the strain of the concrete.

Q. 71. What does "P" represent? Is that a brace running up from the hopper to some part?

A. Known as stay braces from the top of the tower to the side of the hopper to hold the hopper in position.

[fol. 94] Q. 72. Do you see anything in this photograph that looks like any sort of a chute or trough leading from that hopper?

A. No, sir.

Q. 73. Do you know Mr. Walter Newsom Thornton?

A. Yes, sir.

Q. 74. Do you remember whether he had anything to do with the work on that building, on the Lynnhaven Building?

A. Yes, sir, he set in all the plugs for the steam fitting and plumbing, pipes coming through from one floor to the other, and he used to bawl me out continually about covering them up and he would have to come around and uncover them.

Q. 75. And Mr. J. Samuel Goldback—do you know him?

A. Yes, very well.

Q. 76. Do you remember whether or not he had anything to do with any of the work on this building?

A. Yes, sir, he put in the conduits for the electric wires, the pipe work, under the steel, and lots of times I would have to wait for him to finish to get a little piece of pipe.

Q. 77. Do you remember seeing him about the building during its construction?

A. Yes, sir.

Q. 78. Frequently or infrequently?

A. Very frequently. He would come up there and help the boys to work sometimes and did a lot of work himself.

Q. 79. Have you a distinct recollection of having seen the concrete [fol. 95] discharged from the hopper into the wheel barrows and the wheel barrows rolled or pushed from the hopper to the different points on the building where the concrete was dumped or deposited?

A. Very distinctly. I used to do it myself.

Q. 80. Do you recall having gone with me some time during last summer to call on Mr. Townley Tatterson?

A. Yes, sir.

Q. 81. You were with me at our interview?

A. Yes, sir.

Q. 82. Do you remember what Mr. Tatterson said at that time as to his recollection as to whether or not troughs or chutes were used in the construction of this building?

Mr. Smith: This question is objected to as calling for heresay.

A. He said he didn't remember of any chutes being used or he didn't remember much about the job, that there was very little that he was around there.

By Mr. Anderson:

Q. 83. You were present when he made that statement?

A. I was. He made it to me.

Cross-examination by Mr. Smith:

X Q. 84. Were you transferred from the Lynnhaven Hotel job as soon as the concrete was completed?

A. I was back and forth. I wasn't transferred. I wasn't taken away. I got my salary from the Lynnhaven job just the same.

X Q. 85. What did you do after the concrete work was finished? There was nothing else for you to do around there?

[fol. 96] A. I had separate gangs of men. I had men in the Lynnhaven cleaning up and things of that kind, taking old lumber out, and I had men on the Vinery digging out holes for the footers, cutting out holes around the pile caps.

X Q. 86. How long had these men worked on this cleaning up job after the cement was laid?

A. Well, they were practically there until the job was finished.

X Q. 87. When was that?

A. It was somewhere in the neighborhood of March or April. I can't say positively. We commenced moving in the furniture when

we had finished and it was painted but they had not finished the dining room and the main entrance and the rathskeller.

X Q. 88. How often were you transferred to the Vinery Building while the cement work was going on on the Lynnhaven Building?

A. Probably, Mr. Smith would be through with me sometimes in half a day on the Lynnhaven and he would say, "Kerns, take your men over and start on the footers again."

X Q. 89. What was the longest time you were ever on the Vinery Building during that time?

A. I think it was in the neighborhood of two months that I was on there and I was taken sick after we had finished the Lynnhaven. I mean by that we had practically finished, no more than going back and cleaning up.

X Q. 90. During the summer of 1906 while you were employed on the Lynnhaven Building you occasionally went over to the Vinery Building to work; is that correct?

A. Toward the last part of it, yes, sir, of 1906.

[fol. 97] X Q. 91. How long did you work over on the Vinery Building?

A. Probably wouldn't work over there a day before they would be ready for us on the next floor to go ahead.

X Q. 92. You shifted back and forth from one job to the other?

A. Yes, sir.

X Q. 93. Was Townley A. Tatterson employed as time keeper on the Lynnhaven Building while you were on that job?

A. He came there some time in January or February of 1907.

X Q. 94. That was after you had gone over to the Vinery Building?

A. Shifted backwards and forward, yes, sir.

X Q. 95. You were still on the Lynnhaven Building when he came there?

A. Yes, sir.

X Q. 96. How are you able to fix the date as January, 1907?

A. Because it was just at the time that I had come out after having my foot hurt and I come down to see Mr. Smith in regard to my salary. I hadn't received any and he told me that my salary had been ordered just the same. I went up then and saw the time keeper which was Joe Boere. It was on Saturday and he told me that my money was down at the office. I went down there and I couldn't find it. I came back and met Townley and his father and I asked him about it and that is when we found out that the books was being padded. He had bricklayers and carpenters on there that wasn't on the job, amounting to the neighborhood of \$250.00. Mr. Smith [fol. 98] came out and talked to me and said "Andy, I will fix it up for you, but I want you to hurry up and come back so you can put the concrete in the rathskeller." When I came back Boere had been arrested that Saturday and I came there hobbling on one crutch and Townley then took up the job as time keeper.

X Q. 97. When was it that you were covered up by cement by the caving in of the fifth floor?

A. That was along in warm weather. I can't say just exactly when it was. It has been quite a while ago.

X Q. 98. Were you laid off after that?

A. Yes, sir, I never lost any time after that at all.

X Q. 99. When did you lose the two months. Was that after you stuck the nails in your foot?

A. Yes, sir.

X Q. 100. That was about Christmas time, 1906?

A. Yes, sir. I was going up to notify the men to knock off Christmas Eve, when it was done, in 1906.

X Q. 101. When was the concrete work begun on this Lynnhaven Building?

A. The foundation was started some time in June, 1906.

X Q. 102. I call your attention to a sketch attached to the affidavit heretofore filed in this case and executed by you on the 23rd day of August, 1920, and ask you who made this drawing?

A. Mr. Gleason, the superintendent, drew it for me.

By Mr. Anderson:

X Q. 103. Superintendent of what?

A. Superintendent of H. K. Ferguson Construction Company in building the Liggett & Myers Building in Richmond.

[fol. 99] By Mr. Smith:

X Q. 104. How did you happen to get him to make this sketch for you?

A. He was a little better drawer than I was. I just didn't know how to draw the way he did. That is all, and it was agreeable with Mr. Anderson to let him do it.

X Q. 105. What is Mr. Gleason's business now?

A. He was general superintendent for H. K. Ferguson.

X Q. 106. Is he engaged in concrete construction work?

A. Yes, sir.

X Q. 107. Is he familiar with apparatus of the kind illustrated in this sketch?

A. Yes, sir, he said so at that time.

X Q. 108. At the time he made this drawing?

A. Yes, sir.

X Q. 109. Did he say this is the kind of apparatus that is now being used?

A. No, sir, he did not.

X Q. 110. Was he on this Lynnhaven job at the time that was going on?

A. No, sir, he was not. I never knew there was such a man as him then.

X Q. 111. He had been on concrete construction jobs where this kind of an apparatus had been used?

A. Yes, sir. That is the old style way.

X Q. 112. Did he make this drawing without any help from you?

A. I just told him what I wanted and that is what he gave me.

X Q. 113. Did you indicate to him what you wanted?

A. The simple reason why there was one in Richmond being worked by the Ferrell Construction Company and I told him that [fol. 100] it was a chute, a hopper, the same as that one there that we used in Norfolk and I wanted to get an idea of it for Mr. Anderson.

X Q. 114. This apparatus that was in Richmond was there last summer when this sketch was made?

A. Yes, sir.

X Q. 115. And you told him to make a drawing of the apparatus that was in Richmond?

A. Yes, sir, some thing similar to it, yes, sir.

X Q. 116. This drawing then purports to show something that was down in Richmond last summer?

A. Not exactly. The hopper part wasn't built exactly that way. I explained to Mr. Gleason that it was more of a sloping shape.

X Q. 117. Is that handwriting on the drawing your handwriting or is that Mr. Gleason's handwriting?

A. I think Mr. Anderson put it on there.

X Q. 118. Did anybody suggest to you what you wanted to show on that drawing before you went to see Mr. Gleason?

A. No, sir, I told Mr. Anderson that there was no such thing as a chute used there and I told him I thought I could get him a drawing of something similar that we used and I asked Mr. Gleason would he help me and he said he would.

X Q. 119. Were you on the upper floor of this Lynnhaven Building at all times during its construction?

A. During the laying of the steel and pouring of the concrete I was, sir.

X Q. 120. That was not during the entire construction of the building, though, was it?

A. The fourth floor.

[fol. 101] X Q. 121. You didn't see any troughs used at all during any part of the construction?

A. No, sir.

X Q. 122. What education have you had, Mr. Kearns?

A. Common school education.

X Q. 123. Do you recall anything about the consistency of the cement that was used on the Lynnhaven Building? Was it soft enough or liquid enough to flow?

A. It was at one time when Mr. Preston ordered it stopped because it was too soft. After the sediment would come to the top and it made a scum, a very slippery scum on top.

X Q. 124. In the construction of reinforced concrete it is desirable to have the cement pretty wet, isn't it?

A. Well, according to the way you are going to use it or how you are going to use it. If you are pouring columns you don't want your cement too wet. If you are pouring floor slab you want it moist enough so it will give you a good surface underneath, but if you have it too wet the cement will go through the cracks. It will leave what they call honeycomb spots.

X Q. 125. Do you recall the nature of the steel reinforcement that was used in the Lynnhaven Building, just what was put into the cement there as a reinforcement?

A. Steel bars, caron bars made by Deitrich Brothers in Baltimore.

X Q. 126. Where is this Vinery Building located with respect to the streets?

A. It is about 125 feet from Freemason Street on Granby running through to Monticello.

X Q. 127. Near the Y. M. C. A. Building?

A. Second door from the Y. M. C. A.

[fol. 102] X Q. 128. There is one building in between?

A. Just a small building.

X Q. 129. How large is the Vinery Building?

A. I couldn't say now. I have forgotten. I used to know the full dimensions of it. It is in the neighborhood of two hundred and some feet deep but I wouldn't say for sure what the frontage is.

X Q. 130. Comparatively narrow building?

A. The Vinery?

X Q. 131. Yes.

A. No, the Vinery was a wide building.

X Q. 132. How high was the building?

A. Two stories, as far as we went.

X Q. 133. What kind of a hopper was used on the tower for receiving the cement from the buckets on the Lynnhaven Building. Was it wood or metal construction?

A. It was wood lined with sheet tin.

X Q. 134. Was this a hopper that was made up there on the job?

A. Yes, sir.

X Q. 135. How was it attached to the tower? How was it supported on the tower?

A. By way of bolts and braces nailed to it.

X Q. 136. Was it much of a job to take this hopper off and move it up when you moved the tower up?

A. Well, sir, we took it down and moved it in about three-quarters of an hour or an hour all told.

X Q. 137. You don't recall that any chutes or spouts were used for distributing cement at any point in the building?

A. Not at any point while I was on that job, no, sir.

Signature waived by agreement of counsel.

[fol. 108] The further taking of depositions in this matter was adjourned to 10 o'clock A. M., May 3, 1921.

Office of Phlegar & Tilghman

Norfolk, Virginia, May 3, 1921.

Met pursuant to adjournment of yesterday.

Present: Same parties as heretofore noted.

J. SAMUEL GOLDBACK, being first duly sworn, testified on behalf of the plaintiffs as follows:

Examined by Mr. Anderson:

Q. 1. State your name, age, residence and occupation?

A. J. Samuel Goldback; 34; Norfolk, Virginia; Atlantic Electric Company, vice-president and salesman.

Q. 2. How long have you been connected with the Atlantic Electric Company?

A. We were organized the 7th day of May, 1907, and have been in business continuously since then.

Q. 3. Prior to that time with what company were you connected?

A. Chesapeake Construction Company.

Q. 4. Is the Atlantic Electric Company a successor to the business of the Chesapeake Construction Company?

A. Consolidated and successor, yes, sir.

Q. 5. Did your concern, either the Chesapeake Construction Company or the Atlantic Electric Company, have anything to do with the construction of the Lynnhaven Hotel?

A. First the Chesapeake Construction Company and then the Atlantic after it was formed.

[fol. 104] Q. 6. Just what did these concerns have to do with the construction of this building?

A. The construction and installation of the electric equipment, so far as applied to lighting and power lines, installation of lighting and power lines.

Q. 7. Did you personally have anything to do with this work?

A. While the rough work was being done I was in charge of it.

Q. 8. Was the work which was done by your companies such as required your presence on the building during its construction?

A. Whenever we had work to do.

Q. 9. Just give us, if you will, some idea of just what the work was that your companies did?

A. Do you want to know how it progressed or what the class of work was?

Q. 10. Just so we can know whether you had to do with the setting of pipes up through the floors or what?

A. We had the setting of pipes in the forms of the building and the pulling in of the wires after the building was poured and the handing of fixtures.

Q. 11. You said a while ago that your work required your presence on the building during the period of the rough construction. Just what do you mean by the rough construction?

A. What we call rough construction, & building up to the time they start to plaster, start to put the finish on.

Q. 12. Of what construction is that building?

A. Concrete.

Q. 13. Were you on this building at time when they were pouring concrete?

[Qd. 105] A. Yes, sir.

Q. 14. About how often would you say you were on the building during the time the concrete work was going on?

A. The number of times I wouldn't say.

Q. 15. Was it frequently or infrequently?

A. I should say at least 50 per cent of the entire time it took to pour the concrete.

Q. 16. Would you say that was every day or as at every two or three days?

A. Approximately every two or three days. The exact time it is impossible to say.

Q. 17. What is your recollection as to how the concrete was poured during the construction of that building?

A. Mixed on the permanent mixed by an elevator to a hopper and put from a hopper into what I believe, called from there by suggestion to the place at which it was to be poured.

Q. 18. Was any of it deposited by means of troughs or chutes?

A. To the best of my recollection it was not.

Q. 19. Have you had any experience in the working of concrete?

A. Yes, sir.

Q. 20. Just what experience have you had?

A. Practically over since I have been old enough to work. I have been closely associated with drawings of foundation and foundation designs.

Q. 21. Where were you educated?

A. In public schools in Richmond.

Q. 22. I show you a panel sketch of drawing, Exhibit No. [Qd. 106] Exhibit 20, and will ask you if you ever saw anything like this used in connection with the construction of the concrete on the Lyndhurst Island Building?

A. To the best of my recollection I have not.

Q. 23. What do you understand is done or required in that drawing?

A. This drawing is to show an elevator with a hopper and one or more movable sections of trough to convey cement material.

Q. 24. How is the mixer end of the hopper upper trough supported, apparently?

A. I should say by either a cable or steel and weight. It is hard to say from the drawing.

Q. 25. Did you know Arthur L. Smith?

A. Yes, sir.

Q. 26. In what capacity was he connected?

A. I think Arthur L. was the man's name. He was experienced one of the managers on the job.

Q. 27. Mr. Smith has testified that chutes of the character shown in this Exhibit 20, consisting of two and sometimes three lengths or sections of trough, which would mean a length of perhaps 20 to 30 or even a large number of feet, which would make a total semi-circular area with a radius of 20 to 30 or more feet, with the mouth of the hopper as a center, over which the concrete would have been deposited by the chutes or troughs, and that this construction was employed on the floors from the fourth to the seventh. Do you think it would have been possible to have used this construction for that amount of work without your having seen it on this job?

A. It wouldn't have been possible for them to have used it without my seeing it, but, as I stated before, I am going on my recollection.

[fol. 107] Q. 28. Where was this Lynnhaven Hotel Building located?

A. Granby and Freemason.

Q. 29. And what is it known as now?

A. Southland Hotel.

Q. 30. When was this building constructed?

A. If I remember, somewhere during 1906 and 1907.

Q. 31. How do you fix that date?

A. The fact that the Chesapeake Construction Company started the work and the Atlantic Electric Company finished it. The Atlantic Electric Company was started somewhere during that period.

Q. 32. Is there any other occurrence that enables you to further fix that date?

A. It was built during the building period for the Jamestown Exposition and we were having a lot of labor trouble and that is how I happened to be on the job, on account of strikes.

Q. 33. During the time that you were working on this building just what was your connection with the Chesapeake Construction Company and the Atlantic Electric Company?

A. With the Chesapeake Construction Company I was an employe and with the Atlantic Electric Company as an employe and a stockholder.

Q. 34. Do you recall about how high the lower end of the hopper from which the concrete was discharged into the wheel barrows was situated from the floor which was being constructed?

A. That varied, from time to time, with the construction. At times it would be just a little above the floor on which they were pouring and then at other times it would be as much as two floors above.

[fol. 108] Q. 35. You mean the hopper would be?

A. Wait a minute. That question I can't answer because I would be drawing on my imagination. If I answered that question I would give you a concrete answer of my experiences with other buildings and I couldn't give any real sure enough answer as to that in this special instance.

Q. 36. Have you any recollection of seeing the wheel barrows placed under the mouth of this hopper and carried from there to the various places on the building where the concrete was to be deposited?

A. Very distinct and based especially on an accident they had in which one section fell and a nigger rolled his wheel barrow right along down the hole.

Q. — Do you recall about when that accident was?

A. I don't know what floor it was on any more.

Q. 37. Do you happen to recall about when the pouring of the concrete on the different floors was completed, that is for all the floors?

A. No, sir.

Q. 38. Do you remember anything about the shape or appearance of the hopper from which the concrete was dumped into the wheel barrows?

A. Set on an angle and the sides were built so that had it been continued it would have made a cone with a gate at the mouth.

Q. 39. I show you Plaintiffs' Exhibit Kerns' Sketch and will ask you to state whether or not the hopper shown in side and end elevation on that sketch corresponds in a general way with your recollection of the shape and outline of the hopper as employed during the construction of that building?

[fol. 109] A. Exactly. I don't remember all of these curves but in outline it is exactly. As I remember, it was straight and he has curves there that makes the plan look pretty but I don't remember them being there.

Q. 40. I show you Defendants' Exhibit 19 which is a photograph of this building and will ask you if you find the hopper shown in that photograph?

A. Yes, sir.

Q. 41. Designated by the letters 2 or P?

A. Either one you want to make it, P being the upper end and 2 being the lower end.

Q. 42. As a matter of fact, doesn't P go to what appears to be a stay-rod or brace there?

A. It may be.

Q. 43. You will notice the numeral 3. To what part of the hopper does that refer?

A. It don't look like it hits the hopper at all. It may be the mouth of the gate.

Q. 44. Can you see anything at all in this photograph that looks like a trough or chute leading from the hopper?

A. No, sir.

Q. 45. In your affidavit executed by you in this case on the 29th day of August, 1920, you state that "For some reason or other, for a short time, the concrete was discharged into a trough from the hopper and from the said trough into wheel barrows, by means of which it was carried to the point where it was to be poured." Will you describe, if you remember, a little bit more fully just the arrangement of that trough as used by you there?

A. It would have been a single length when the elevator had been extended above the level on which the building was being poured so as to bring it down to the wheel barrows.

[fol. 110] Q. 46. It was used only then when the hopper was ele-

vated a considerable distance above the floor, as you referred to a while ago?

A. In my recollection, yes.

Q. 47. Do you know Andrew J. Kerns?

A. That is the man that was outside?

Q. 48. Yes.

A. Yes, sir.

Q. 49. Do you remember whether he was employed on the Lynn-haven Hotel Building?

A. Yes, he was.

Q. 50. Do you remember in what capacity?

A. First, as I remember, a saw filer and afterwards in charge of the men pouring the concrete.

Q. 51. Did you have anything to do with the construction of the Vinery Building.

A. No, sir.

Cross-examination by Mr. Smith:

X Q. 51. When you were on this Lynnhaven Hotel job were you in charge of a number of workmen or were you actually working on this conduit work yourself?

A. Both.

X Q. 52. You have stated that you were there on this work when there was work to be done. I take it that the work didn't go on continuously and that you wouldn't be there all the time?

A. In the building of a concrete building of that class it is usual for the general contractor to get his forming up in sections. As soon as he gets that section done he calls on whoever has anything to do on that section and gives them a certain length of time to get [fol. 111] their stuff in the clear and he starts pouring. By the time they get that section in the clear they will have another section and the concrete men will be right behind you.

X Q. 53. What do you mean by "in the clear"?

A. As soon as you get through with your section, the section you already have, there will be another section for you.

X Q. 54. Am I correct in understanding that the electrical work was placed and held in position before they began to pour the concrete?

A. Yes.

X Q. 55. As I understand, you finished your work of setting the electric conduits before they began pouring?

A. Not on the complete floor but on one section.

X Q. 56. I understand that each floor was built up in sections?

A. Yes, sir.

X Q. 57. You finished the conduit work for one section before they began to pour the concrete for that section?

A. We finished sufficient for them to start. We might have been working on half that section and they on half.

X Q. 58. Is it true that you put the conduits in place in advance of the work of the concrete men?

A. Yes, but we always had to have some one to watch our stuff to see that it was not knocked out of place by wheelbarrows going over it, and men stumbling or material dropping on them. We had to have some one there while the concrete was being poured.

X Q. 59. Did it sometimes happen that you were sufficiently far ahead with your work to lay off a little while before you had to come back and go on with it again?

[fol. 112] A. Yes. At that time, as I say, it was only while they were building new sections. It was necessary at all times that we have some one there while they were pouring to see that our stuff was not knocked out of place.

X Q. 60. Who did you leave there, one of your workmen?

A. At that time usually myself because we were in the midst of a strike and had very unskilled help.

X Q. 61. That, as you recall, was not the uniform practice?

A. It was not uniform practice. Most anybody could stay and watch them.

X Q. 62. You stated a while ago and also in the affidavit which you filed some time last summer that for a short time, at least, a trough was used for distributing cement from the hopper to the wheel barrows and that the hopper was elevated to enable that to be done. Do you recall to what extent that operation was carried on?

A. No.

X Q. 63. But the hopper was at times elevated a considerable distance above the floor on which the concrete was being poured?

A. At times, yes.

X Q. 64. And do you remember how many lengths of trough were used in conveying the concrete from the hopper?

A. My recollection is not more than one.

X Q. 65. As you remember it, only one was used, or at least that is all you saw?

A. That is all I remember seeing.

X Q. 66. Wouldn't it have been possible for them to have used more than one length sometimes when you were not there on the job?

[fol. 113] A. Possibly, yes.

X Q. 67. That might have been done without your seeing it?

A. Yes, it might have been done without my seeing it.

X Q. 68. And in the construction of the floors from the fourth to the seventh it might have been possible for Arthur L. Smith or those in charge of the concrete work to have used two or three troughs at some time without your seeing it?

A. It might have been but I would say it would be improbable, from the fact that I had to watch our work.

X Q. 69. Would it have been possible for an arrangement such as is shown in Defendants' Exhibit 20 to have been used for a part of the work on the fourth to the seventh floors without your having seen it?

A. It would have been possible, yes, but as I say, I think it is improbable as I was there watching our work and I do not remember seeing it used.

X Q. 70. When they used a single length of trough which you do remember, was it the practice to convey the concrete down to that trough and then run it into a wheel barrow and roll the wheel barrow on off to the place where they wanted it?

A. Yes.

X Q. 71. Do you recall about how high the hopper was elevated above the floor when that was being done?

A. As I said before, if I would say how high I would be mixing up this job and some other job and I couldn't give a fair answer.

X Q. 72. But you do remember distinctly that it was elevated sufficiently to enable the concrete to run down through the trough?

A. Yes.

[fol. 114] X Q. 73. Do you remember about how long the trough was?

A. No, not accurately. As I remember it was no longer than sufficient to give it a fall, allow the stuff to run.

X Q. 74. This photograph which is Defendants' Exhibit 19 you have stated that you are unable to see anything there which might be a trough. I call your attention to the part here marked 3 and ask you whether that might not be a trough or the upper part of a trough leading from the hopper?

A. It is impossible to say. The portion there joins the building so close and there are so many marks on it that it is impossible to say what that was.

X Q. 75. The photograph is rather hazy and indistinct anyway, is it not?

A. Yes, on that portion.

X Q. 76. If there were troughs there the major portion of them would be out of sight?

A. It would be in this superstructure up here.

X Q. 77. Do you recall, Mr. Goldback, about the time when the concrete work was begun on the Lynnhaven Hotel Building?

A. Not exactly. I should say it was done some time during the summer and fall.

X Q. 78. Do you mean the summer and fall of 1906?

A. I couldn't say exactly when it was done, whether it was summer or fall, fall or spring. Any exact time would be a guess. It would be a guess if I were to express any dates on it. I do remember at one time we had ice on the building and that must have been some time during the fall or winter, but whether it was in that building or some other building, I wouldn't like to absolutely say.

[fol. 115] X Q. 79. Do you recall whether the building was put up before the Jamestown Exposition or not?

A. I think it was. I think it was put up in time for the Jamestown Exposition, if I remember right.

X Q. 80. When you were at work on this building do you recall how long a day you put in?

A. There were times when night work was necessary and other times it wasn't.

X Q. 81. Your impression of the job is that it was rushed as rapidly as possible?

A. It was rushed as much as possible to rush any job.

Redirect examination by Mr. Anderson:

R. D. Q. 82. You spoke a while ago about the forming for the different sections being completed. Just what do you mean by "sections" there?

A. In the middle of a concrete building the pillars support the slabs and the distance between two pillars is called a section.

R. D. Q. 83. To make the thing a little bit more concrete, just about how large or extensive as to area would one of the sections have been on that Lynnhaven Hotel Building?

A. Somewhere around a hundred square feet.

R. D. Q. 84. That is ten feet each way.

A. Ten feet each way or multiples of that.

R. D. Q. 85. You mean that the sections varied in size or area in that building?

A. If they have one 10 foot square or any number of ten feet squares we call that a section, that they would have a part of the form up ready for use and would say "This section is ready and you can go ahead with it."

R. D. Q. 86. The sections you have reference to are the ten foot square sections?

[fol. 116] A. Yes, sir.

R. D. Q. 87. And I also understand there were times when you were still working on a particular section, placing your conduits or whatever they were, and they were at the same time pouring the concrete on another part of that particular section?

A. Quite often.

R. D. Q. 88. At other times you would have finished your work on a section and then you would have gone to the next ten foot square section adjoining?

A. Yes, sir.

R. D. Q. 89. While they were pouring the concrete?

A. And then at times we would not be ahead of them and they would have to hold up for us to get our section finished before they could get to it.

R. D. Q. 90. Was it the general practice at that time for you to be there when this concrete was being poured, to watch your pipes or conduits or whatever it was you placed there as the concrete was being poured?

A. Yes, sir.

R. D. Q. 91. You were there instead of some one of your employees?

A. Usually.

R. D. Q. 92. Referring to the trough which you referred to a while ago, was that a stationary or a swiveled or pivoted trough?

A. Tell me exactly what you mean by stationary?

R. D. Q. 93. How was it supported?

A. To all intent it was rigid but it was not, as I remember, made fast to the top. It was slipped under the hopper, the top section extending under the hopper mouth.

R. D. Q. 94. You mean the top part of the trough?

[fol. 117] A. Yes, and the bottom section was supported in such a way that it was not readily movable.

R. D. Q. 95. Do you recall anything as to the slant of the trough from the hopper down?

A. No, sir.

R. D. Q. 96. Do you recall whether it was blocked up on trestles or blocks of some kind? Do you recall anything about that?

A. No, sir.

Recross-examination by Mr. Smith:

R. X Q. 97. When you were laying out the conduits for the work for the electric wires, some of these ten foot sections which you have referred to were naturally located a considerable distance from the hopper, I suppose?

A. Yes.

R. X Q. 98. And in your work there on the building you were generally located some distance from the place where the cement was distributed from the hopper?

A. We may have been working at some distance but our material would be distributed all over the building and we would have to go from place to place to get it and we traveled pretty well all around it when we were working there.

R. X Q. 99. Do you recall whether you were ever considerably in advance of the concrete men in the laying out of your conduit work?

A. No, sir, we never were.

R. X Q. 100. In general you had to finish one of these ten foot sections before they started laying the concrete?

A. That is right.

[fol. 118] By Mr. Anderson:

R. D. Q. 101. And also at times you prepared some of these sections which were situated or located near the hopper, did you not?

A. Right under the hopper.

R. D. Q. 102. That is not only right under the hopper but also within a radius of 20 and 30 feet?

A. Yes, sir.

By Mr. Smith:

R. X Q. 103. Did you have charge of this work continuously from the time the building was begun until it was completed?

A. No, until the rough work was completed.

R. X Q. 104. I am referring to the pouring of the concrete?

A. Yes.

Signature waived by agreement of counsel.

The further taking of depositions in this matter was adjourned to meet on notice and agreement of counsel.

VIRGINIA,

City of Norfolk, To wit:

I, F. C. Tilghman, a Notary Public for the City of Norfolk, Virginia, certify that the foregoing depositions of Charles Cooper, William T. Baker, Walter Newsom Thornton, Roland Brinkley, F. M. Glines, Carter Gay, Andrew J. Kerns, and J. Samuel Goldback, were duly taken and sworn to at the times and place and for the purpose in the caption mentioned, and that signatures thereto were waived by counsel.

Given under my hand this — day of May, 1921.

F. C. Tilghman, Notary Public.

[fol. 119] IN THE DISTRICT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF PENNSYLVANIA, June Term, 1920

In Equity. No. 2067

CONCRETE APPLIANCES COMPANY and WILLIAM H. INSLEY,
Plaintiffs

vs.

JOHN E. GOMERY, JOHN C. SCHWARTZ, MICHAEL J. OMERA, and CONCRETE CONSTRUCTION COMPANY, Defendants

Depositions of witnesses on behalf of plaintiffs, in accordance with notice and agreement, before L. Belle Weaver, acting as special examiner by agreement, at Los Angeles, California, room 212 Stock Exchange building, March 11, 1921.

Present: Arthur M. Hood, Esq., and C. E. Fleming, Esq., for plaintiffs; George P. Barton, Esq., for defendants.

LEE CALLAHAN, a witness produced on behalf of plaintiffs, having been first duly sworn, deposes and says as follows:

Direct examination by Mr. Hood:

Q. 1. Please state your name, age, residence and occupation.

[fol. 120] A. Lee Callahan; residence, 1622 West 24th Street, Los Angeles, California. My age will be 55 years the twelfth of this month. Occupation is architectural designing and building. Registered under the name of Lee Callahan & Sons, City of Los Angeles, California.

Q. 2. Are you the Lee Callahan who made application for United States Letters Patent No. 948,719?

A. Yes.

Q. 3. When did you come to Los Angeles?

A. It was in November, around the 26th, of 1907.

Q. 4. What did you do when you arrived in Los Angeles?

A. I immediately began to look around to secure a job, and in doing so I saw a reinforced concrete building under construction here in Los Angeles on the Majestic site, and known as the Majestic Theatre Building. I sought the contractors of the building, and met Mr. Hugh W. Bryson, connected with the F. O. Engstrum Company, general contractors. In talking with Mr. Bryson I stated that I was practical in the handling of large work of various construction, and especially so in concrete. That I had ideas whereby I wanted to apply concrete in new principle, as I term it, of handling concrete through pipe lines by the means of hoisting on a tower with a bucket and the electric hoist or other power or method of hoisting the materials, to a point sufficiently above my work that I might reach all parts of my building and foundations or superstructure work in a thin solution of mixture or of plastic consistency that I could flow it through these pipes or troughs, in other words, that it would slide through these devices to the point of distribution, so sought. In talking with Mr. Bryson I found he became interested with my explanation [fol. 121] or ideas. He told me to proceed with the arrangements of such work. Now, I will not be positive whether there was a small little section of a tower or not. I found the conditions of the work thus: The concrete had been placed most of it to the ground level, and a section of concrete had been placed on what would be termed the first floor of the Broadway building entrance side, on the main entrance of the building. The forms were being placed, and a good portion of the forms and the front section of the building were being placed preparatory for the arrangements of the second floor slab of their front part of the building. Now, to proceed with the work—”

Q. 5. Please describe the construction which you described to Mr. Bryson, in your early interviews with him; that is, tell us what you told Mr. Bryson as to the details of the construction of the apparatus which you wanted to use.

A. I wanted to make, the best I can recall, something like four-inch round pipe, that I would place on this boom pole that I proposed to attach to the tower and to extend out from the tower being secured to the tower with an adjusting or a swivel joint so I could oscillate it, and at the end of this pipe at the tower I could so construct a little pan which would be open and would sleeve onto the end of this other pipe, and would extend back inside of the tower to the edge of the tower sufficient to extend under a spout or a gate, rather; what I mean by a gate, is I had a slide that I could work up and down with a lever that works by which I could open the hopper that the plastic concrete could slide in this, so that when I raised this gate it opened the bottom of a hopper, that I had built inside of the tower, that the concrete, when dumped into, as a receiving hopper, received [fol. 122] this plastic or soupy concrete, and when I would raise this gate, with a man there in the tower to operate it, it would let this soupy concrete flow into this receiving pan which was conveyed to this small pipe down to the point of this little boom. This boom and pipe section I now speak of is held in position to the tower by

means of a small rope or a steel cable controlled by block and tackle. One end of the tackle being fastened to the tower, at a sufficient angle above this hopper that when it would carry the outward end of this boom that carried the flow of concrete to this point, at the outward end from the tower of this pipe I had like an eighth bend, made like an elbow, to cause the concrete to slide down, went straight down. Around that I had a little band or a swivel, by which I fastened another little receiving pan which was open, and similar to the first pan described at the tower. That sleeved onto other pipes, and those pipes we would swivel, thus enabling it to swivel this lower section, to the various positions in which I wanted to pour the concrete. Now, these outward sections, they were down in reach, and we would place trestles or horses, we would call them, or other little temporary means of stagings or means to support that pipe, the weight of it.

Q. 6. After you had had this preliminary conference with Mr. Bryson, what happened?

A. Mr. Bryson told me to proceed with the work, the preparations.

Q. 7. When did you go on the job?

A. The day after Christmas, 1907.

Q. 8. At that time what was the condition of work on the Majestic Building?

[fol. 123] A. As I stated previously, the concrete were in place to about the ground level, including the floor slab of the front section of the building, and the forms for the first story in preparations for the second-story slabs of the front section or Broadway side of the building was in place. I find—I won't be positive—whether there was a little preparation or a tower that had been used there for some order there or not; I couldn't state.

Q. 9. Please describe just what you did, taking it up by various steps, toward erecting an apparatus such as you had in mind, for the purpose of spouting concrete on this building?

A. I proceeded to direct the erection of the tower and the placing of equipment necessary for the handling of concrete work. I first had, if there were any tower there at all, it removed, and I directed the building of the tower on the south side and about half-way back of the Majestic Building. I had a pit dug and started the base of my tower low enough that when the bucket was down I had one pit sufficient that I could set my mixer far enough below the surface of the ground to admit easily of dumping my material into the mixer. The bucket, understand you, is at a still lower level, sufficiently low that when the concrete was mixed I could readily dump it into the bucket. This bucket was arranged to run or slide on the outside of this outside of the tower. Our hoists set back in line of the side of the tower sufficiently that our cables running from the drum of the hoisting apparatus under a sheave at base of the tower and passing through the side of the tower, this cable extending to what I call the cross-head or a frame with two sheave blocks, and across and to drop perpendicular back [fol. 124] to the ground where I could fasten to the bucket. That bucket was arranged that its frame slid against the track which was built on the outside of the tower to hold in position while convey-

ing the concrete to the top of the tower. In the top of this tower I arranged a hopper, receiving hopper, I called it, or a box, so arranged and lined with sheet metal, and I dumped this concrete into this hopper; and as I stated before, conveyed into the pipe line. In the meantime I had some pipe, galvanized iron pipe, and some open sections or receiving pans that I have described, prepared for this work. I made rough sketches for this work, which I could readily enable the workmen to carry out such apparatus as I had in mind.

Q. 10. How and where did you mount this pan in connection with the hopper?

A. This pan and hopper were of considerable height above the level or sections of work desired to be poured, for convenience of proper gravity, by which to flow the concrete.

Q. 11. Describe the manner in which the pan was mounted on the tower, and state what its capabilities or movements were, if any?

A. The pan at the tower, and the boom pole, was so arranged by means of a swivel joint or revolving action, that I could swing this boom pole, being controlled by the block and tackle holding this boom pole and first sections of pipe into position, that in oscillating this apparatus that my guy lines controlling this section of pipe would not be tight on one side and slack on the other at the time of oscillation, and it was so placed that this receiving pan at the tower or at this hopper in the tower would always be in position to receive the soupy or thin concrete without splashing out and giving us bother. In that way we could oscillate in any direction on the building.

[fol. 125] Q. 12. Please state whether or not the hopper in this first apparatus of yours had an open bottom.

A. This hopper that I have spoken of is open at the top, and it is open at one side, and the side facing our receiving pan, with a little shoot-out which I have described as a gate with a lever controlled by a man to open and close that. When that gate was raised, it would let the concrete slide out into this receiving pan. If he wanted to shut up for any cause, or for any trouble, it would close that gate, and we had a closed hopper. In other words, to feed that material in such quantities as we so desired from the bottom of that hopper.

Q. 13. State as nearly as you can the time when you had this apparatus completed and you first delivered concrete through it to the forms.

A. The best I recall, it was only a few days either just before or about the first of January, 1908. It was only a matter of three or four days to get in readiness, and we were pouring concrete about that time.

Q. 14. What, if any, trouble did you have with this apparatus after beginning?

A. At the beginning naturally we had some trouble; first had about a four-inch round pipe, and it was a little too small, and it would clog up at times and cause us a little delay, and then I had some larger sizes made. We was experimenting to some extent at

that time, and I had no question in my mind of the success of what I had.

Q. 15. When you found that this four-inch pipe would clog up at times, what did you do?

A. I proceeded to have larger pipe made.

Q. 16. And about how soon did you get this larger pipe in?

[fol. 126] A. It would only take a matter of a day; just long enough for the sheet metal department to make up the pipe that we would want.

Q. 17. And when you got the larger pipe in, did it work satisfactorily?

A. It worked considerably better than the first pipe, but yet we had some little trouble with that second size of pipe.

Q. 18. Then what did you do?

A. Then I ordered still a larger size, about a seven-inch pipe, and that worked entirely satisfactory, enough so that we went right ahead with our concrete pouring on the Majestic Building.

Q. 19. About how high from the ground did you place the hopper at the beginning of your operations?

A. The best I recall, I built my first tower something like fifty to sixty feet; I wouldn't be positive, but it was sufficiently above the operation of the work that I could pick up and pour concrete on the second floor level or back down to pick up cantilevers, stage work, or work anywhere back to the basement, as the case might be; that I could have sufficient gravity to avoid stoppage on the line so I could proceed with my work.

Q. 20. After you got the concrete poured up to the second floor level, what did you do with the apparatus then?

A. Naturally, as we would proceed upward with the construction of the building, we would extend the height of our tower and making apparatus or pipe lines so we could slide those right up the tower, and in the matter of a few hours, with four or five good mechanics, we would have our cross-heads, our hoppers, and our boom apparatuses, moved up in the proper position to accommodate the work at this stage of construction.

[fol. 127] Q. 21. When you had poured the concrete up to the second stage of construction, what did you do then?

A. We continued a like principle until the work was completed, sending our towers on up accordingly.

Q. 22. How tall a building is this Majestic theatre?

A. I believe it is an eight-story building.

Q. 23. Please state whether or not this apparatus which you have described was used in pouring all of the concrete of the building after you began its use.

A. All of the concrete of the entire building was poured with this apparatus, and we even mixed our topping for the finished floors, so all of the concrete work, flat and structure, were performed through and by the means of this apparatus.

Q. 24. Please state whether or not you found the use of this apparatus resulted in any saving of labor costs.

A. Very materially so.

Q. 25. What sort of a finished structure, that is, what sort of finished concrete work, was accomplished by the use of this apparatus? How does it compare with concrete structures produced by the old wheel-barrow method?

A. The old methods of placing concrete andumping would not give us the dense principle in concrete, or in other words we could get a great deal more dense concrete, more in a homogeneous principle, and a concrete that would stand a far greater test than the old principle.

Q. 26. You have mentioned the fact that during the building of this special apparatus, you made some sketches. Did you preserve those sketches?

A. I think I did, yes, sir.

Q. 27. I am referring now to the sketches which you say you made during the time you were first building this apparatus at the Majestic Theatre.

[fol. 129] A. I made rough sketches in pencil that I could carry the idea to other workers in the making of parts of this apparatus from time to time through the progress of the work.

Q. 28. Have you still got those particular sketches?

A. I have got those sketches, but I improved on those sketches from time to time that I revised, in pencil, in other words, made it a little more compact as I went along. That sketch I believe I have.

Q. 29. You mean that you didn't keep the original sketches, but that you made a later sketch with some improvements?

A. Yes.

Q. 30. Will you please produce a rough sketch of the apparatus which you actually used at the Majestic Theatre job?

A. I have a little rough sketch here that I have sketched out in line as to the locations and trying to convey the principles that were carried out on the Majestic Building.

Q. 31. When did you produce this sketch?

A. This sketch, this morning. I visualized it in my mind, as near as I could recall it in my mind.

Q. 32. You produced this sketch at my request, did you not?

A. I did.

Mr. Hood: Counsel for plaintiff often the sketch in evidence and the same is marked Plaintiff's Exhibit A. Collision House Sketch.

Q. 33. Will you please produce the sketch to which you referred in your answer to Q. 29.

A. I do so.

[fol. 129] Q. 34. About when did you produce this sketch?

A. This sketch I was working on from directly after I commenced my work on the Majestic, and I finished this sketch sometime in the month of August, 1908.

Q. 35. I notice that this sketch has been folded into rather a small compact. Do you recall why it was so folded?

A. If I consider not, it is a check that I submitted to my attorney in Washington, D. C., James E. Shelly & Company, for a search with the view of better paying.

Q. Do you know anything about the rubber stamp that "Received Drawing 11-1000, Drawing" which appears in the upper right-hand corner of this sketch?

A. I received an answer, the exact date I couldn't recall, but I received an answer from my attorney, and in that answer he stated I was informed that my drawing was patentable, or worth so that effect, or gave me that impression.

Q. Who placed the rubber stamp that on the drawing, do you know?

A. I couldn't mention.

Q. Was it on time after the drawing came back to you from the patent attorney?

A. I couldn't state when it was placed. It was on time when I received the papers back.

Mr. Blood: Counsel for plaintiff offers a photostatic copy of this sketch as evidence, and the same is marked "Plaintiff's Exhibit A - Plaintiff's Drawing." It is stipulated that the photostatic copy, Plaintiff's Exhibit A, may be received and considered in with the copy from and (Exhibit 30) offered as the original, the original to be subject to production upon call of opposing counsel.

Q. When you named the name of the Wapato opposition from time to time, just how did you do it?

A. We had it arranged where we could take a set of blocks and make up five little crookedish or crookedish marks that the horse was harnessed to, three at the base of the neck, two on either side of the horse started up from the base, simple like with the block and make, having one block and make at the neck and at the block and make at a sufficient height as the neck of the harness so could hit this quantity, if not the more pieces, when we arrested, we could hit the end of the neck or with something to these blocks and make them to the ground hard and such around there we call the "Type of Superficial" a little attachment on the side of the horse where we could take a couple of turns around that, and by means of the horse running a man would have to strike to catch the block rope, and by that method we would be able to hit on the side of the horse to restrain and restrain to arrest in order to prevent him from running, we lifted our bigger ends of the rope to give the one ends on to the blocks.

Q. So the you result having done this business, what is it to anyone while you were making it, or at about the time you left it completed?

A. That is to Mr. Bussey.

Q. Do they still continue on the Wapato 300?

A. I was on the Wapato Building from the day after Thanksgiving until the concrete was poured, sometime there in the month of June. I believe I was there in the latter part of that, or in July.

[fol. 131] sometime about that time. The building wasn't finished, but the concrete was poured.

Q. 42. What did you do then?

A. The F. O. Engstrum Company had taken a contract for a large reinforced concrete building known as the Timken Building in San Diego, California, and I was informed by the Engstrum Company that I would be the general superintendent of the construction of that building; and about the best I recall somewhere around the 18th of August, 1908, I took charge of the construction of the Timken Building spoken of.

Q. 43. And what sort of an apparatus, if any, did you use in the fabrication of that building?

A. I used the same apparatus as I used on the Majestic Theater in 1907, that I have spoken of first building, and the work being done with the same apparatus in the beginning of 1908, as stated.

Q. 44. What do you mean by the same apparatus?

A. I used the same principles, only I improved on the principles, and built my apparatus of a better or more economical construction. I overcame the little difficulties that I found in my first apparatus, and was just more perfecting the various parts.

Q. 45. Will you please produce a photograph of the apparatus which you used at the Timken Building?

A. Yes. There, Mr. Hood, is an apparatus as I built the Timken Building from its foundations to its completed status. Here is my photograph standing in a directing position where I am pouring the concrete in the main cornices and roof slab of the said Timken Building.

Q. 46. About when was that photograph taken?

A. That photograph was taken, the best I can recall, in about March or April; I won't be positive which; of 1909.

[fol. 132] Q. 47. How does the apparatus shown in this photograph which you just produced, compare with the apparatus as you began to use it in the foundation of the Timken Building in August, 1908?

A. This apparatus was the same.

Mr. Hood: Counsel for plaintiff offers in evidence the photograph produced by the witness, and the same is marked Plaintiff's Exhibit C, Photograph of Timken Building Apparatus. It is stipulated that a reproduction of this photograph may be used with the same force and effect as the original.

It is also stipulated that if Lee Passmore, of San Diego, California, were called and examined as a witness on behalf of plaintiffs, he would testify that he took the negative from which this photograph was taken, and that said negative was made by him on the roof of the Timken Building, San Diego, California, about March, 1909.

In view of the fact that defendants at this hearing are represented by local counsel, the above stipulation is subject to the condition that it may be withdrawn by notice from defendant's principal counsel within ten days after the original photograph has been submitted to him for examination in Chicago.

Q. 47. I notice that in this photograph, Exhibit C, the second swiveled pipe section is open for some distance at its upper end. Will you please describe how this lower pipe section was connected to the boom support of the pipe section, and the purpose of this open upper end.

A. The section shown on the second jointing of pipe hanging onto that elbow or spout of the pipe extending down through the [fol. 133] boom line is held by a swivel joint, which works and is hung around that lower section of the first line of pipe, and to avoid trouble of clogging up at this particular point, and for convenience of workmen to get to it, and to take care of an overflow, even though it was clogged up below that point, without giving extra bother in the main line.

Q. 48. Did this apparatus at the Timken Building work satisfactorily?

A. Perfectly. It always attracted quite an interest of the public to see the new method of placing concrete. Naturally it was delightful to us to demonstrate.

Q. 49. After you completed the work at the Timken Building what did you do then?

A. After finishing the concrete work of the Timken Building I was sent to Phoenix, Arizona, to do a reinforced concrete piece of work for the F. O. Engstrom Company, and the finishing up of a reinforced concrete building that they had the contract to do there.

Q. 50. Did you use the same sort of apparatus on that building?

A. Yes; as far as was necessary to use any apparatus at all; I poured quite a bit of concrete in that building; I always used the same apparatus in any concrete work I had to do.

Q. 51. On about how many reinforced concrete buildings have you used an apparatus for chuting concrete, comprising a tower, hoist bucket, a hopper to pour it on the tower, and provide it with a gate, and raised from time to time on the tower as the work progressed, a boom pivoted to swing horizontally on the tower, and raised at its pivot point from time to time on the tower as the work [fol. 134] developed, the boom being supported entirely by the tower, a conduit or pipe supported by the boom, and so arranged as to be capable of receiving the concrete from the gated hopper no matter in what position the conduit might be swung from side to side, and the second pipe section swiveled to the lower end of the boom supported pipe section so as to receive the discharge from the boom supported pipe section?

A. Quite a number; I don't know that I could recall at this time all of the buildings so constructed, but I will mention a few as I can recall it, to-wit: the Ferguson Build- on the corner of Third and Hill Street, in Los Angeles, California, an eight-story building. George W. Marston Building, in San Diego, a large building, of dimensions 100 by 200 feet, and five stories. In the same town, the Bridges Building, 100 by 100 feet square, with basement, six story building. The Watts office building, in San Diego, a ten-story reinforced concrete building. A building in San Diego also, the Pioneer warehouse, a six-story building, 100 by 100. And va-

rious other pieces of work that I can not very well recall at this time; but I have always used that method or apparatus of handling concrete down to the present time.

Q. 52. What is the lattice arm which extends diagonally across the middle of this photograph, Exhibit C?

A. You mean this boom pole running down here, which is built of angle iron and small steel bars? That is the boom pole in which the pipe line is held in position and is so arranged on the tower in this particular case where I could oscillate and cover or reach about three-fourths of the building without moving the base of the boom pole where it was attached to the tower. Then when I moved, [fol. 135] all that I had to do was to unloose that little cable that I had locked around this swivel, and I could just simply slide the base of that boom pole at the tower across to the other corner. The same connection or control was handled where the dies carries the outward end of this boom to another cross-head, to slide that just across to the opposite side of the tower, we could reach three-fourths of the building in our swinging movement of the boom.

Q. 53. How much of the concrete of the Timken Building was delivered to the forms through this chuting system?

A. In its entirety.

Q. 54. After you had made the sketch, Exhibit B, did you have any more complete drawings made?

A. That is it.

Q. 55. Will you produce that drawing?

A. That is a drawing on tracing cloth that I had or employed a draftsman by the name of Carl Reger. He was the superintendent for Harris & Albright, the architects of this Timken Building. Knowing Mr. Reger quite well, I had him make this tracing here produced on tracing cloth from the pencil sketches I had previously made, and also personally suggested.

Q. 56. In your reference to pencil sketches, in your last answer, do you mean Exhibit B?

A. I mean that is the one I present to you here on this little white paper. (Witness refers to Exhibit B.)

Q. 57. Where is Mr. Reger now, do you know?

A. His official address I could not give, but I have a letter from him, a few months ago, and I believe he was at Wheeling, West Virginia; he was in West Virginia; that was his old home place. [fol. 136] That was the last address that I had of him. His residence at the time of this drawing was in San Diego, and he later moved to Los Angeles.

Q. 58. I notice that this tracing which you have produced is dated November 20, 1908. What does that mean?

A. That was about the time of the completing of this drawing or tracing.

Q. 59. I notice on this tracing the words "Patent allowed." What does that mean?

A. Well, I had a letter—I won't be positive just what it was—stating my ideas was patentable, and I authorized at my own suggestion to Mr. Reger to state that on my drawing here, and that my

attorneys, or words to that effect, would understand from these drawings, I was preparing to send my attorneys at Washington, D. C., James J. Sheehy & Company.

(A blueprint of the tracing just produced by the witness is offered in evidence as plaintiff's Exhibit D, Callahan, November 29, 1908, drawing.)

Q. 60. When did you first think of an apparatus for chuting concrete, comprising a tower, hoist bucket, gated hopper, vertically adjustable on the top, a vertically adjustable boom pivoted to swing horizontally on the top, and a pipe carried by the boom and arranged to receive the discharge from the hopper?

A. I first conceived the idea of handling concrete in a spouting attitude with apparatuses, of that sort, in 1901.

Q. 61. Do you recall having described such an apparatus as is described in Q. 60, in detail, to anyone prior to your conversation with Mr. Bryson, prior to Christmas, 1907?

[fol. 137] A. I have had no conversation or expressed my principles and purpose in any detailed order until in 1907 with Mr. Bryson.

Q. 62. Prior to that time had you had any opportunity to erect an apparatus such as you have had in mind, in connection with a reinforced concrete building where the concreting was to extend several stories above the ground?

A. I had not.

Q. 63. Prior to your coming to Los Angeles, had you done any experimenting or any work in connection with obtaining a proper concrete mixture of such character that it would flow through spouting?

A. I had.

Q. 64. State briefly what that experience had been, and the times when it was had.

A. Well, as I recall, in 1901, at Colorado Springs, Colorado, and for the Ben Brewer Brick Company, Ben Brewer, the owner of a residence, in which I supervised the entire building, and such building had a concrete foundation up to and a little, I just remember, above the ground level. That foundation I placed, by mounting my mixer up from the ground on a little frame work or platform, and I made some wooden troughs or boxes, open boxes or troughs; nailed together three boards with a bottom and two sides, and I made that concrete soupy enough, or of a plastic consistency, that I could let it run through these boxes and over to the places where I wanted to deposit it; and I found that I got fine results in that crude way of handling it, and I felt very much elated that I had done away with the idea and use of the old wheel barrows and tamping it with a rod, tamping rod, or tamping block. After that, in 1903, I believe it [fol. 138] was, in June, I believe it was, Ben Brewer Brick Company had taken a contract for a bank and hotel building at Colorado City, and would be properly located on the corner of Colorado Avenue and Court Street, in Colorado City, Colorado Springs. I had quite a little concrete there and basement work that I poured or placed in the same box principle that I did the foundation. I also

had some other foundation in a similar way during 1903 and beginning of 1904. In 1904 I was the superintendent for the same company, with new members in it, in addition to Mr. Brewer, of the building of what is called a silicated brick. It was a process whereby we could crush stone and pulverize it, and there was various foundations of considerable amount of concrete and I placed that concrete, all being below the ground levels, in the same manner as I have described of the first work mentioned. In 1905 I placed another foundation for the same brick concern, and the same nature of work, and in 1907 I came to Los Angeles, California, and had my first opportunity of fully presenting my ideas for the use of concrete construction, and an apparatus to so conduct such work, and with the interview that I had with Mr. Bryson mentioned in the beginning of my evidence, to fully set forth and develop my ideas which I had very fixed in my mind for a number of years.

Q. 65. Is Mr. Ben Brewer living?

A. The last information that I had about Mr. Brewer, he is dead.

Q. 66. Do you remember about when you instructed your patent attorneys in Washington to make application for patent 948,719?

A. To recall the exact dates, I couldn't make that, but I believe [fol. 139] it was shortly after I commenced the work on the Timken Building in 1908; my first correspondence possibly was September or October; I wouldn't be definite about that; anyway, it was as soon as I could get my drawings in proper shape to submit to my attorneys in Washington.

Q. 67. Have you copies of that correspondence at the present time?

A. I have not.

Mr. Hood: Direct examination closed.

Cross-examination by Mr. Barton:

X Q. 68. Where were you born, Mr. Callahan?

A. In Kentucky.

X Q. 69. You had certain interferences in connection with the application for your patent, did you not?

A. I did.

X Q. 70. With whom?

A. With Mr. Theodore Emtman, and I believe one Mr. Anderson, if I mistake not. Anyway, there were two interferences in my case, with this apparatus mentioned.

X Q. 71. Was Mr. Arthur L. Smith a party to one of those interferences?

A. Mr. Smith or Anderson; I won't be positive of that. Anyway, there were two interferences. Smith, I believe, is correct.

X Q. 72. In the patent to Smith, No. 948,746, application filed February 25, 1909, I find the following as the first claim thereof: "1. In a device for distributing concrete, means for elevating the concrete to a point above the plane of the work to be performed; a hopper adapted to receive the concrete so elevated; a primary dis-[fol. 140] tributing pipe revolvably mounted beneath the hopper;

and a secondary distributing pipe revolvably mounted beneath the mouth of the first-named distributing pipe, substantially as described." I show you Fig. 1 of the drawing of said Smith patent, in fact, hand you a printed Patent Office copy thereof. Did you in that interference concede that Smith was the prior inventor of what is described by the language of the first claim which I have quoted?

Mr. Hood: The question is objected to as not proper cross-examination, the witness having been asked no questions relative to the interference. The question is also objected to as incompetent and not the best evidence, because the records of the Patent Office show what, if any, concessions were made.

A. I did not concede, because I felt, when I was notified of the interference, that he was trying to impose upon my ideas and principles, being such a short time after I had made my application; in fact, my attorneys at Washington, D. C., had so informed me, that my rights were patentable and would be protected, or words to that effect; in other words, I felt and realized that the said Smith mentioned was endeavoring to copy from my apparatus.

X Q. 73. I call your attention also to claims 3 and 4 of the said Smith patent, which read as follows:

"3. In a device for distributing concrete, a concrete elevator; a revolvably mounted distributing pipe adapted to be fed by said elevator; a second distributing pipe revolvably mounted at the mouth of the first-named distributing pipe, and means for controlling the angle at which said distributing pipes are mounted, substantially as described.

[fol. 141] "4. A plant for concrete construction comprising an elevator provided with means for receiving and raising concrete, a chute adapted to receive the concrete raised by the elevator and to deliver the same by gravity, said chute being inclined and being movable horizontally to shift the point of delivery of the concrete, the lower end of said chute being provided with a horizontally rotatable delivery pipe."

I wish you would take your time, read over the descriptions of the apparatus as set forth in said claims 3 and 4, and, if you desire, you may consult with your counsel on the subject, and after doing so, I wish you would give your own ideas as to how your invention as developed, we will say on the Timken Building, and as described in your patent, differs, if in any respect, substantially from the mechanical structures described by the language of said claims 3 and 4.

Mr. Hood: The question is objected to as not proper cross-examination, and as wholly incompetent. The witness is advised that he need not answer a question of this character, which calls for an expression of opinion, unless he so desires, until he is ordered so to do, by the Judge of the United States District Court of this District. It is not necessary for you to answer this question at the present time.

A. I can answer the question in this: there may be some little difference in the mechanical device that he has used or endeavored, as I call it, to sidetrack or get by the principles that I have set forth. The principle of handling concrete by oscillation, he uses a pipe, I see [fol. 142] here, by block and tackle, which I had formerly used in the various makeups of my work. And a suit or interference was taken after my application had been made, and he had had plenty of opportunity, and in fact I believe, the best I can recall, that said Smith had previously visited my work as I was pouring concrete, to the principles I have previously at this examination stated.

X Q. 74. The block and tackle arrangement, you mean, is substantially the same as the arrangement of the boom?

A. It is not; it is only a temporary means that he can operate with, but it is not satisfaction; it is not economical, and it only conveys a small principle of purpose, and could be made applicable only in pouring concrete, as I would term it, in a crude way.

X Q. 75. Did you ever use the block and tackle arrangement itself?

A. Yes; and used the cable and guy lines where I had run it hundreds of feet away; four or five hundred feet distant from my tower down cable lines, always arranging my spouting or pipe line so I could get an oscillating motion, so as to avoid choking up, stoppage on the line.

X Q. 76. What is your reason for thinking that Smith ever saw any of your work?

A. It followed so shortly after my application, with the two interference suits, that it appealed to my mind that he was infringing or copying, personally being on my job before filing of his paper.

X Q. 77. How did the tower, the tackle, the skip, and the hopper, and the pipe of the Smith patent, differ from what you used on the Timken building?

Mr. Hood: The question is objected to as not proper cross-examination.

[fol. 143] A. The tower seems to be constructed on the same principle any more than he has some little different method of shoring or anchorage, as you might call it. I see he has some little method of cross-head or an arm, by which he shows here, mechanically speaking, a little different method of construction, but carrying out or endeavoring to carry out, the same principle of a plastic consistency of concrete construction.

X Q. 78. Now, do you really believe that Smith got up his device after he had actually seen your structure at the Timken Building or elsewhere?

A. No question in my mind.

X Q. 79. You consider it practically copied, do you?

A. I do; any more than he is trying to dodge it on mechanical equipment only. You see, my ideas and apparatus is from a process of principle, or principles, rather, whereby I have used the makeup of many and varied principles of mechanical construction, by which to produce a product that I felt would almost revolution-

ize construction work through a principle of concrete. And it didn't make a lot of difference whether it was a round pipe, an open pipe, or what method, through this process or principles, and the use of these various devices, as they might be, in placing this concrete through these motions giving us the desired results that I was working for; and it had proven, beyond a question, of merit.

X Q. 80. And you think Smith saw that and tried to gobble it up?

A. In fact, I know it.

X Q. 81. What did Smith use that is of any importance that you did not use?

[fol. 144] Mr. Hood: Objected to as not proper cross-examination. It is understood that this objection is to be considered as entered against all inquiries relating to the Smith patent.

A. He hasn't used anything that would be beneficial.

X Q. 82. And how is yours any better than Smith's?

A. I can use it much readier; use it with less labor; and for many and more varied purposes.

X Q. 83. And which part of yours do you claim makes yours better than the parts you claim that Smith took from you?

Mr. Hood: Objected to as not proper cross-examination.

A. You see, from parts as Mr. Smith applies them here, as I may state from this letters patent, so presented me here, patented February 8, 1910, under serial No. 948,746, he can only use, as I have previously stated, in a very cumbersome or impractical way of appliance, and he has only touched upon a few points of good many points that I have submitted in my statement for letters patent, the apparatus in which I use I use it for various purposes, not only in pouring concrete, but I have used my boom arms and poles for construction work. What I mean, by the construction that I speak of, the placing of forms, such as column forms, beam forms; I use a part of the same apparatus for the hoisting of steel, or to adjust and lift stages to take up varied building material; and I have even used down my boom lines and my open trough for hoisting of bricks and dumping them into a similar hopper, but a little differently constructed, and sliding them off over openings or places [fol. 145] of inconvenience of getting to at the time being with other construction work, that I might carry on two points of construction at the same time, which in this you couldn't do anything of the sort. But I am using not all of this apparatus, but part of this same apparatus, and this same tower and all and varied principles in construction work of heavy buildings.

(A recess was thereupon taken until 1:30 P. M.)

X Q. 84. I show you Defendant's Exhibit 44, A, B, C, D. Will you look at them and state whether you have seen these photographs or duplicates of them prior to this time?

A. Yes, sir; down at the Majestic Theatre Building in Los Angeles. I recognize the faces of the men there.

X Q. 85. Among the men do you recognize any that you can call by name? If so, name them.

A. Charley Malmgreen; a man by the name of Smith; I can't recall his initials, but I know his face very well. I know the boys' faces, but I can't recall their names; they are all familiar to me.

X Q. 86. George Eberhard?

A. (Witness indicates George Eberhard on photo.)

X Q. 87. George Eberhard was the foreman?

A. George Eberhard was the general superintendent at the time I took charge of the work; didn't stay through the work. Eberhard was there only a short time after I was there. We didn't get through pouring the auditorium part.

X Q. 88. Does your figure appear in that group?

A. I don't believe I am in that picture; in fact, I never paid much attention to any photograph that was taken, unless they—I had no occasion to take them, and didn't care anything about them. [fol. 146]

X Q. 89. You weren't then thinking about taking out any patents?

A. Yes, sir; I had in mind for the patents before I even saw that building; but I wanted a building that I could work out for the superstructure work; but I had it in mind for many years.

X Q. 90. Did you ever take out or ever apply for other patents than this one before?

Mr. Hood: Objected to as immaterial.

A. Other than this apparatus you speak of?

X Q. 91. Yes.

A. Yes, I have taken out other patents.

X Q. 92. Have they been issued?

Mr. Hood: Objected to as immaterial.

A. Yes.

X Q. 93. Were there other photographs than these four exhibits, 44 A, B, C, D, taken, of the progress of the work on the Majestic Theatre Building, to your knowledge?

A. I couldn't say.

X Q. 94. Mr. Parker has stated that you were there at the building as a straw-boss. What was your work as straw-boss at that time?

A. When I first started on the work I only applied for a position, whatever the opening might be. As a journeyman, you might say. And after my acquaintance with Mr. Bryson, I was put in charge as what you might call a straw-boss. In other words, I had complete supervision of the handling of the concrete, and in doing so I acted as straw-boss supervising the carpenters for the form work. Later on I supervised the laying out and general construction of the work.

[fol. 147] X Q. 95. Who were your superiors in connection with that job?

A. Mr. Eberhard when I first started was in charge as the general superintendent. Mr. Eberhard didn't stay but a short time after I went on the job, and I had charge of the job toward the latter end of it, and when they got ready for the brick work and terra cotta work I believe there was a man by the name of Johnson, I can't recall the initials, who went in there as general superintendent, because I was preparing to leave to take up the supervising work of another contract in San Diego for the F. O. Engstrum Company.

X Q. 96. Did you see and talk with Mr. Theodore Emtman in connection with that work?

A. I didn't know Mr. Emtman. I never have met him that I ever knew of. In fact, I had never heard of him, as far as I can recall.

X Q. 97. Do you know him now?

A. I only know him casually when I see him.

X Q. 98. What is the date, as nearly as you can now recall, of your first seeing him to know him?

A. Well, it was—it must have been a year or more after I went to work for the Engstrum Company, that I ever met Mr. Emtman. My work was mostly, aside from the Majestic Theatre, out of the city, while Mr. Emtman, who was a superintendent for the Engstrum Company, worked mostly in the city of Los Angeles or close around, and our occasions to have met was only by chance of meeting at the main office or something that way.

X Q. 99. You are quite sure that you never talked with Theodore Emtman about any of the apparatus that was used on the Majestic Theatre Building for placing the concrete. Is that correct?

[fol. 148] A. I never talked to Mr. Emtman at all about reinforced concrete, or construction work in any way.

X Q. 100. If I recall your testimony, you have stated that you had never described the structure of the invention of your patent in suit as a whole to anyone until you described it to Mr. Hugh W. Bryson in the latter part of the year 1907. Is that correct?

A. That is correct.

X Q. 101. We have already referred to the structure of the Smith patent. Will you state what, if anything, at that time you described to Mr. Bryson over and above what is shown in the Smith patent to which we have referred?

Mr. Hood: This question is objected to as not proper cross-examination.

A. I had fully talked of my plans, in detail, in the gravity system of pouring concrete, and I talked with Mr. Bryson fully and conclusively as to all of my details before they were fully submitted to my patent attorneys in Washington.

X Q. 102. And what details did you describe to Mr. Bryson before they were submitted to your patent attorneys—what details that are not substantially shown in the Smith patent?

Mr. Hood: Question objected to as immaterial and not proper cross-examination.

A. I believe that I previously have fully stated the difference, if there was a difference, in mechanical equipment or construction of some little device or something like that. That was, mechanically speaking, a little bit different, or something like that, that he was using.

[fol. 149] X Q. 103. Nothing different that amounted to anything?

A. No, sir.

Mr. Hood: The question is objected to as incompetent.

X Q. 104. Do you recall any of the principal men who had charge or supervision or took an active part in the management or planning of the Majestic Theatre concrete work, except Mr. Bryson, here present, and I suppose you would remember Mr. L. A. Parker, and you have mentioned Mr. George Eberhard. Now, are there or were there others connected with that work that you now recall?

A. No, nothing only just a journeyman for the ordinary handling of work, perhaps the supervising, and Mr. Parker, of Maybury & Parker, engineering and structural work of placing of steel and such as that. I knew Mr. Parker and Mr. Maybury.

X Q. 105. What is the very first conversation you remember that you had with anyone about applying for a patent upon the structure which is shown in the patent in suit? This patent is before you.

A. In the talking of a patent, I talked with Mr. Bryson, mentioned previously here, a short time before I went to San Diego to take charge of the Timken Building; that I was going to apply for the patent just as soon as I could get the papers in the proper order to be presented to my attorneys.

X Q. 106. And that is the first conversation you now recall that you had with anyone on this particular subject?

A. Outside of my wife and, for instance, my immediate family. [fol. 150] X Q. 107. In plaintiff's Exhibit C, in which your figure appears, the pipe for carrying the cement is supported, apparently, in a lattice-like structure. I wish you would tell what the material is of that support. Is it iron, or wood?

A. It is iron; channel iron, and little flat bars of steel riveted together.

X Q. 108. When did you first see such a lattice-like structure for supporting a cement pipe?

A. It is my own ideas and construction; I built it there on the job.

X Q. 109. You built it there at San Diego?

A. I built it there in San Diego, in the foundation of the Timken Building; we had a forge for blacksmithing, press drills, and men who were able to do smithing work, and I personally helped to construct and build and place the boom pole, I called it, in such manner that I could carry my round pipe inside of the boom, leaving the boom flat on top, that man could go up and down on the top of that boom and the tower down to the point of that boom, and feel perfectly safe at the time of pouring concrete, to make any adjustments that might be necessary in connection with the work.

X Q. 110. Were there other photographs of that apparatus taken, to your knowledge?

A. I have taken photographs of the building from the beginning of the work clean through the work, but that is the only one that I have at the present time. I have generally taken it more of the building, to show the progress I was making, on my regular reports.

X Q. 111. Then this is the only photograph of the progress of the work on that building that you now know of; you couldn't produce another view, another showing—

[fol. 151] A. Not of the progress. I have taken various photographs of the progress of the work, but this is the only one that I have showing the apparatus which is in pouring the concrete of the roof of this building.

X Q. 112. If the other photographs you took of the progress of the work are accessible, I wish you would produce them, so that I might look them over.

A. Yes, I have those.

X Q. 113. Did you have to do with the construction of the Lukensback Building in Los Angeles?

A. No.

X Q. 114. Do you know who did superintend that?

A. I don't know as I can recall that. I don't know whether it was Malmgreen, Charley Malmgreen, or Johnson. I wouldn't be positive which; either one or the other; but I couldn't state. I knew them, but it is a long time ago, and I can't recall.

X Q. 115. Did you have to do with the work on the Elks Club?

A. No.

X Q. 116. Did you see the work while it was in progress?

A. I may have seen it, but I can't recall any details of it.

X Q. 117. You don't recall whether it had a gravity system for distributing the cement?

A. I couldn't say as to that.

X Q. 118. Did you ever meet Curt O. Wetzel in connection with the work on the Majestic Theatre Building?

A. Mr. Wetzel, I believe, was connected with the F. O. Engstrum Company in the sheet metal department, if I mistake not, and I met Mr. Wetzel frequently.

[fol. 152] X Q. 119. Did he help you to plan anything?

A. He would carry out instructions of making the pipe or iron or whatever I would want; Mr. Wetzel would work with me in the carrying out of my plans for any shop work that I required, for any of that work.

X Q. 120. Is it not a fact that you talked with Mr. Wetzel about taking out a patent on the gravity system prior to the time when you talked with Mr. Bryson about it, as you were going to San Diego?

A. No, sir; I never talked with Mr. Wetzel concerning my patent ideas, at any time or in any manner.

X Q. 121. Don't you recall that he or somebody else, prior to the time you talked with Mr. Bryson, told you that there was nothing patentable about it?

A. No.

X Q. 122. Now, are we to understand that you wish to be understood as saying that such details of your patient as you may desire in the signature of the Smith patent were too relied upon by you with Mr. Bryan, as you have stated, about the time you were going to San Diego to do work on the Union Building?

Mr. Blood: The question is directed to me, the ground that it is an absolute misstatement of the previous testimony of this witness. The witness having previously testified that he disclosed the name of his employer to Mr. Bryan prior to the time of his employment by the F. O. Ferguson Company, and just prior to the time he was to San Diego. The question is further directed to me, as a refutation to the Smith patent, of the erroneous claim, however, as no proper communication.

(Questions read to witness.)

X Q. 123. A. I believe that I have fully stated the purpose of this trip, and I have failed with no one, or given any other, as to a patient, as any form of insurance, only to Mr. Bryan, and I will say that what I had on my application fully set forth the purpose and guarantee shown in that Smith patent.

X Q. 124. You were in San Diego, were you not, with an application of Theodore Curtis?

Mr. Blood: Question directed to me, and proper cross-examination.

A. I was assisted by my attorney in Washington of an insurance with one Theodore Curtis, of Los Angeles.

X Q. 125. Did that surprise you, to receive such a letter?

A. Yes. I had been assisted by a letter of my attorney before I had gotten this notice of insurance, of both Smith and this man, that my patient had been allowed, but it was not forwarded to me until after answering of the questions and, which, I believe, was done by compromise with me, and agreeing that the patient is to be allowed along the line of understanding together, the two result.

X Q. 126. What negotiations did you have with reference to giving the patient to the Company Building Company? And after the talk negotiations take place?

Mr. Blood: Directed to me, immaterial, and not proper cross-examination.

A. Oh, I am going back after the answer, as about the transfer of the patient, just about, I will not be positive as to that. If had the full conversation, or conversation with Mr. Bryan entirely in the future, we would have our present understanding as to the transfer of patient patient might be passed to me, or had been passed to which I had taken Mr. Bryan as a man of confidence of our future adjustments, but I agreed for his patient to be much a referee proceeding the necessary of closing the sale between the Ferguson Companies.

Q. Do you think the information you provided is facts or just your personal feelings about the case?

16. Blood: Thinner is an anti-venom preparation used to dilute the antibodies found in the snake venom.

As it appears from Section 20(1)(b) which might be amended as the section appears, article 11(2)(b) that it may request certain bodies involved in or liable to the other notwithstanding article 11(2)(b) rights of persons might not be limited to the citizens of Hong Kong and thus if the Board and the association article 11(2)(b) the Board might file action in the courts of the other country the other members of which might notwithstanding article 11(2)(b) might have a right notwithstanding

9. 6. 1977. Vom 10. 6. nachmittags ganz verdeckt, am Abend, im selben Raum wie das Bivouac-Lager. Es ist eine abseitige Innenwand eines geschwungenen Ziegelhauses ohne Fenster oder Türen, die ausgemauert ist.

W. Beck, James Blandford et al. / Journal of Macroeconomics 33 (2011) 866–888

In the process, there was a gradual transfer between the Mayor and myself, so as to assist me considerably during my tenure. As the City had no trust deed, we decided, instead, to create a fiduciary agreement in the name of the City, so that our

I have no general belief in this doctrine; but I am willing to accept it as true for many and many more than I like to do. He avails to represent the old and ancient ones added up to the early mass of his original ones transferred over. I have had no special objection to this notion, or anything about it.

9.8 (80) *Marine Mammals* (including seals, sea lions, and sea otters) have been listed as threatened or endangered under the Endangered Species Act.

If Dr. Brown had been satisfied in his office he would have accepted the position at the opportunity it presented. Many such opportunities

Il 16 aprile il nuovo bilancio dei conti della cassa di risparmio di professionisti dell'industria di Cuneo risultava in deficit complessivo di 100 milioni e 700 milioni. Per quanto è possibile appurare in quel momento le cifre del bilancio 1998 della Cassa di Risparmio di Cuneo, risultava di 100 milioni e 700 milioni di deficit.

(b) (5)(B) By virtue of the fact that the above is subject to further
legislative action by the preceding parishes and as thereon it is
not yet fully classified except by reference of names and it is
impractical. The question is apparently to be clearly answered without
specification and explanation.

He added that members of several other delegations had also mentioned the importance of the Conference to the development of the international community.

Mr. Hood: The words "Lee Callahan," as well as the words "C. T. Hirst," are in typewriting, and quite apparently the same typewriter as the rest of the paper. There is absolutely nothing on this paper to show its authenticity, or the correctness of its statements. It is wholly improper as the basis for examination.

Mr. Barton: My question spoke of it as a copy only. I am assuming that a certified copy may be obtained, and am accordingly referring to this copy *de bene esse*.

Mr. Hood: There is nothing on the paper itself to show that it is in fact a "copy" of anything. Counsel for plaintiff have no objection to the offer of a certified copy of any preliminary statement which this witness may have made, and to an examination based thereon, although apparently it would be outside of the direct examination, and, therefore, not proper cross-examination. But as there is nothing at hand at the present time by which the authenticity of this alleged "copy" may be determined, it is insisted that the proposed question is wholly improper.

A. Not that I recall.

X Q. 131. Do you recall making or swearing to any preliminary statement in connection with either this interference No. 30,533, or the one between you and Emtman, the latter of which, as I am informed, involves the claims of your patent in suit Nos. 1, 2, 5 and 13.

[fol. 157] Mr. Hood: The question is objected to first as assuming matters not proven by the record, and secondly, as indefinite, on the ground that it does not appear that this witness knows the technical meaning of the phrase "preliminary statement," the meaning of which is highly technical. The question is also objected to as not proper cross-examination.

A. I recall, at the time that I was notified by my attorneys of the interferences, of calling my attention to certain features or numbers as the interference suit brought by Emtman and Smith, and forwarded immediately, without consulting Mr. Bryson or anyone else, but I felt it was the proper information for my attorneys to proceed with, and if the last question asked me is of that purport, I filed an answer or statement of what the requests and requirements of my attorneys were.

X Q. 132. Did you file two such statements, do you remember—one in each interference?

Mr. Hood: The question is objected to as immaterial.

A. I don't think that I made any—well, I won't be positive as to the statement, but I don't think I was requested or required, the best I recall, for further statement than the information that I gave to my attorneys.

X Q. 133. And did they send back a paper or statement in which they had put in shape what you told them, and did you sign that and swear to it before a Notary Public?

A. Any statements, papers, or documents, drawing, or what might be requested by my attorneys, I always executed as per their request, to make them efficient.

[fol. 158] X. Q. 134. And it is your belief that you did swear to such a paper, and return it to your attorneys?

A. Any request that was made by my attorneys, I answered accordingly.

X Q. 135. Yes; but, specifically, you believe, do you not, that you did sign and swear to such a paper as I have described?

Mr. Hood: This line of examination is objected to as wholly incompetent, in addition to the reasons already disclosed, and also, in the absence of anything being shown to be any properly certified copy of paper or alleged paper being shown to the witness.

A. No doubt I subscribed to papers along that line, but as to that specific paper that is there, I don't know of; but if it was required of me, whatever papers were presented me at that time, I subscribed and swore to it and identified it in a legal way as requested by the attorneys; whatever dates that may have been; what that may have been, I can't recall; it is a long time.

X Q. 136. I understand that you took out a patent in the Dominion of Canada, No. 144,246, dated November 19th, 1912, for material-transferring apparatus, and that in that Canadian patent the same claims are found that are found in the patent in suit; also that there was a suit in the Supreme Court of British Columbia between Concrete Appliance Company, plaintiff, and W. K. Rourke, J. McDonald, and R. Moncrieff, carrying on business as general contractors at Vancouver, B. C., under the firm name and style of Rourke, McDonald and Moncrieff, and the said firm of Rourke, McDonald and Moncrieff and Mussens, Limited, defendants; and that you [fol. 159] gave a deposition for the plaintiff in said case in December, 1914, before I. Benjamin, Notary Public, etcetera. Will you state if such are the facts?

A. As to the letters patent, there was a patent issued in Canada, and the suit mentioned was on infringement, and I gave testimony in open court, and not by deposition.

X Q. 137. Don't you recall that Frederick S. Lyon conducted your examination at Los Angeles, and that you were cross-examined by Mr. Anderson, of Anderson & Anderson?

A. I remember, or the best I can recall, of making a statement before Mr. Lyon, but just when that was, or its purpose, at that time, I can't fully recall.

X Q. 138. I show you a photograph, on the back of it being marked in pencil, "Insley apparatus shown in photo;" and at the bottom on the back of the photograph appears "April-1913, Hudson Bay Co. Building, Vancouver, B. C." I will ask you if you have seen that photograph before, or a duplicate of it, and if so, when and where?

Mr. Hood: Objected to as irrelevant and immaterial.

A. I may have seen this photograph in Vancouver, about 1914, when I was examined in that interference in Canada, but I have no special marks of identity other than just a faint recall of such.

X Q. 139. Do you consider that that photograph shows what you consider your gravity system?

Mr. Hood: Objected to as incompetent.

A. Yes.

X Q. 140. Would you give a general description of the gravity system as it is shown in that photograph?

Mr. Hood: The question is objected to as wholly improper and not cross-examination; no foundation has been laid to connect the [fol. 160] apparatus shown in this photograph with the issues involved in the present case, and so far as any apparent date is concerned, it seems to be long subsequent to the patent in suit. Counsel for plaintiff protests against padding the record with matters of this kind, in the absence of any showing connecting the structure shown in this photograph with either of the parties to the present cause.

A. I can describe here of troughs and receiving pans, I would call it, and receiving hoppers, such as are being generally used now in concrete work.

X Q. 141. What is the purpose of the beam that projects to the left about centrally of the picture?

Mr. Hood: Question objected to as not proper cross-examination, and as relating to a matter having no proper foundation in the present record.

A. That boom that you have reference to impresses me only as a construction boom used singly and separately from concrete work, like the seat of one that appears in the diagonal corner which is handled in a different direction, which leads me to believe that is what is used altogether, and not in connection with concrete, only as a boom only to lift other materials with.

X Q. 142. You mean just such booms as had been used for many, many years in the construction of buildings?

Mr. Hood: Question objected to as not proper cross-examination, and because based upon a photograph which has not been properly identified or proven.

A. Yes. That might have been possible.

[fol. 161] X Q. 143. How are the cement pipes or troughs in that photograph represented as supported and handled?

Mr. Hood: Question objected to as not proper cross-examination.

A. The pipes as shown in the photograph show to have been braced by truss or stay rods underneath of the pipe, which would tend to stiffen the pipe as would a boom pole used for like purpose. It seems to be controlled, and operated, with rope and tackle, and is transferring your concrete from your receiving hopper over into some other little receiving pan of a like constructed pipe, and vice versa, until the concrete is distributed in place. That is as it appears to me.

X Q. 144. Did you have any such photograph or a description of such apparatus as is shown in the photograph before you when you gave testimony, as you say, in open court, at Vancouver, B. C.?

A. There was a number, as I recall it, of photographs. It may have been presented to me during my testimony in Vancouver.

X Q. 145. And is it a fact that this photograph represents in substance the structure that was made by the defendants, and that was claimed as an infringement of your Canadian patent, to which I have referred?

A. As I recall, it does. Of course, I was shown many photographs in giving my evidence, at that time.

X Q. 146. And what difference, if any, in the mode of operation in the process or function of the apparatus does the use of such cable type of boom effect, if substituted for the particular type or construction of boom shown in the drawings of your patent here in [fol. 162] suit, and as particularly pointed out in claims 1, 2, 5 and 13, to which I now call your attention?

Mr. Hood: The question is objected to as based upon a structure not fully disclosed, and as indefinite.

A. There is not much difference whether you operate with a cable or a boom, so you can have an oscillating boom in your pipe line, which causes an even flow or distribution of your concrete. It can operate as well on a cable. A boom pole is merely to operate a whole line of apparatus economically and speedily over the heads of other workmen, in the other work or process of construction. Cable lines can be fixed to carry your concrete equally as well, but it is a fixed line. Those fixed lines at the end of the main line—there we attach a movable joint for a short distribution; but the principle of operating and pouring over a boom pole, and a cable line, gets the same results of the concrete.

X Q. 147. Does it change in any way the mode of operation or principle of the device?

Mr. Hood: The question is objected to as indefinite, and as based upon an incomplete disclosure not properly proven or identified.

A. No, not the principle.

X Q. 148. In the device of this photograph, what element in the apparatus is supported by this cable boom to which you have referred?

Mr. Hood: Question objected to as not proper cross-examination, [fol. 163] and also on the ground that the witness has not referred, in his discussion of this photograph, to any "cable boom."

A. I don't see any boom at all; it is only the fixed pipe. It seems to be held in place by a cable, or a block and tackle with ropes, and seems to be fixed, at fixed points, with the exception of the lower or the bottom section where the men is operating just the level of pouring their concrete. It seems for any further adjustment, it would

be to loose these stiff joints and make them stationary again; as to the reference of this photograph.

X Q. 149. I will quote what purports to be a question and answer in the deposition I have referred to as given by yourself:

"Q. 21. Does it change in any way the mode of operation or principle of the device?

"A. The principle would be the same whether on a cable or on an oscillating boom. I frequently use it myself on cables for convenience, when I drop a boom. For instance, in steel frames, if I want to fireproof, I have a system of cables where I stretch my devices on and make a leading line, and at the end of it for distributing purposes I work identically the same as if it was on a boom. I pretty near as often use a cable line even when I am using the boom, for many conveniences, rather than by moving the boom in operation. It is the same principle."

I call your attention also, in this connection, to the fact that X Q. 146 is quoted from the said deposition, and is the statement of Mr. Lyon, except that at the end Mr. Lyon refers to your Canadian patent, and I refer to your United States patent in suit.

Mr. Hood: The question is objected to as assuming facts which have not been proven; also as not proper cross-examination; and also [fol. 164] because there is no showing that at the time of the alleged deposition the witness had before him the particular photograph which is now being used as a basis for the question.

X Q. 146 (continued). Would you testify in the same way at the present time?

A. Yes; I presume I would, as far as I understand it.

(Thereupon an adjournment was had until Saturday morning, March 12, 1921, at ten o'clock A. M.)

Los Angeles, California,
March 12, 1921—1:30 p. m.

(Met pursuant to adjournment. Same counsel present.)

LEE CALLAHAN, recalled.

Cross-examination resumed by Mr. Barton:

X Q. 147. Can you fix the date accurately as to the time of your arrival in Los Angeles?

A. You mean my first arrival here?

X Q. 148. Yes.

A. I think, the best I recall, was about the 26th day of November; that is the best I can recall, somewhere about that time, in 1907.

X Q. 149. You have no original entry or memorandum that would aid your memory?

A. Not that I know of. Just as I recall, it was somewhere about that time, the latter part of November, about that date. I know we was speaking about it, me and my wife, the other evening, with the [fol. 165] children, we was recalling the time; somewhere around the 26th of November; I am pretty sure it was that time.

X Q. 150. Can you fix the actual date of your first meeting Mr. Bryson?

A. No; I couldn't fix the exact date, but it wasn't but a few days after I came to Los Angeles. As I have previously stated, a few days; in looking around for a job, I met Mr. Bryson; the exact date I couldn't place, but it was only a few days.

X Q. 151. How many minutes did you talk with Mr. Bryson at the first interview?

A. To go back in memory 12 years back, it is pretty hard to say; we had a casual conversation, as an ordinary business man would, in the making our introduction, I would say; and after a brief talk, Mr. Bryson suggested we would meet again in the next day or such a matter; and in a day or such a matter after that I met with Mr. Bryson, and I had with me a set of blueprints of a considerable sized apartment building that I had prepared before coming to California. This only was to give information to Mr. Bryson that I had an understanding of considerable-sized work. At this meeting we had quite a little conversation, which culminated in Mr. Bryson stating he would give me a position.

X Q. 152. Was that second interview of a period of as much as 15 minutes?

A. Well, as I recall, we must have talked three-quarters of an hour to an hour; just as I can recall. We had a considerable conversation; he looked through my plans, and we talked over them; then we went on into his business, and in looking and trying to secure for myself a position.

[fol. 166] X Q. 153. When next did you see Mr. Bryson?

A. Well, I didn't see Mr. Bryson for a few days; I can't just state what; just before Christmas. It had been raining off and on quite a little, and just moved in, me and my family was getting located; setting up the housekeeping, and arranging to get the babies to school. So at the next meeting with Mr. Bryson he told me to come to work, that was a day or such a matter before Christmas; and he said, being it's Christmas, we will go to work the day after; that is why I fix the date in my mind as clear as I did, the date of starting to work; the day after Christmas. So the day after Christmas, of 1907, I went to work as previously stated, and set forth for the F. O. Engstrum Company.

X Q. 154. What was your actual work the first day of your service, that is, when you went on the pay roll?

A. I believe, the best I recall, the first day of the service I was given charge of a few men, and began to erect the erection of forms for the concrete.

X Q. 155. What did you do the second day?

A. The second day I began to arrange for the placing of a mixer,

digging a pit for a tower, placing an electric hoist suitable for the order of work as I have previously stated in this evidence.

X Q. 156. The third day, what did you do?

A. It was a continuation of the work in preparation for the pouring of concrete on this Majestic Theatre building.

X Q. 157. You don't know the exact day when you began pouring concrete, I understand?

A. As I was stating, stated previously, it was only a few days, I believe around the 1st, about the 1st day of January, 1908.

[fol. 167] X Q. 158. You have no time book or diary that enables you to positively fix the date, I understand?

A. I think not; but it is about that date.

X Q. 159. Do you not now recall showing Plaintiff's Exhibit "B" to anyone except Mr. Bryson at any time?

A. Not prior to my letters application of patent, not that I recall.

X Q. 160. Did you aim to keep the construction secret, that is, not to publish it generally?

A. I didn't intend to publish it generally, until after I had secured letters patent, sufficient that I couldn't be robbed of it. Naturally I intended to put it to the public after having protective rights, as I felt I was entitled to from the Patent Commissioners of the United States of America.

X Q. 161. Did anyone advise you to keep it secret, that is keep it to yourself so far as you could?

A. I had no advice from anyone, other than my own ideas about it.

X Q. 162. Have you seen or have you in your possession any advertisement, catalog, or other printed publication of the F. O. Engstrum Company, in which are shown views of the Majestic Theatre Building and other buildings that you superintended?

A. I believe I have.

X Q. 163. Have you such a publication as is accessible to you?

A. I believe I have some at my residence; I won't be positive, but I have quite a lot of photographs principally that the Engstrum Company have done, that I have taken views of, and I believe I have a little book written up on concrete appliances, or something to that effect, showing little views of buildings I am not sure, but [fol. 168] I think it shows the Majestic and the Timken Building, and other buildings that have been constructed by the Engstrum Company with this apparatus system previously described.

X Q. 164. You have sent to your house for photographs of the Engstrum work; while we are waiting for them, I wish you would state if you have any original drawings, sketches, or description of any part or portion of the structure set forth in your patent, of an earlier date than Defendant's Exhibit B?

A. I don't think so.

X Q. 165. You have no rough sketch or writing or other item or paper showing any part or portion of what is shown in Plaintiff's Exhibit B, prior to Exhibit B?

A. Prior to what I have previously stated, such rough sketches

that I prepared for the work of the erecting of equipment in connection with the Majestic Theatre, this work being improved upon, the sketches that I made for this first work; the sketches we speak of here has been improved along those lines with a view of submitting, as I have previously stated, to my attorneys for a search of right of patentability.

X Q. 166. This Exhibit B, then, is the earliest sketch that you now have in your possession the others were not preserved?

A. That is right.

X Q. 167. And I have understood you to say that Mr. Bryson is the only one to whom you showed this Exhibit B, prior to your sending it to your Washington attorneys?

Mr. Hood: The question is objected to as containing a statement contrary to the direct examination of the witness, the witness [fol. 169] having testified on direct examination that this particular drawing was shown to the draftsmen, Reger, for the preparation of Plaintiff's Exhibit D.

A. As I have previously stated, I did not fully reveal my ideas of the system to other than Mr. Bryson before mentioned, until a later date I explained in pencil sketch and in person, as previously stated, to one Mr. Carl Reger, who was a draftsman, to do my tracing of the tracing sheet as I have presented here.

X Q. 168. Yesterday you had before you the Smith patent, and particularly his claims 1, 3 and 4. I will ask you, partly in repetition, this question: If the structure described by the language of said claims 1, 3 and 4 was old at the time you made your change or improvement, what do you consider to have been the specific change or improvement which you made? What, if anything, did you add to what is described in those claims of Smith? I place the Smith patent before you.

Mr. Hood: The question is objected to as not proper cross-examination, no direct questions having been asked the witness relative to the Smith patent. The question is further objected to as incompetent, in that it calls for an expression of opinion, and the witness is instructed to decline to answer the question until ordered so to do by the proper court.

A. I will state I believe I fully answered in my previous examination to a conclusion of this question.

X Q. 169. I will read from a paper which purports to be a copy [fol. 170] of a preliminary statement filed by you in Interference No. 30,533, as follows: "That he made a full and complete apparatus, beginning with the 18th of September, 1908, and completed the same on the 11th of October, 1908. That inasmuch as the apparatus was then complete and successfully operated, he considers that he reduced his invention to actual practice not later than October 11th, 1908." Do you recall having made, in substance, the statement which I have thus quoted?

Mr. Hood: The question is objected to as calling for a statement of conclusion.

A. I only recall, in substance, as previously stated, in the submissions of my drawings and case submitted to my attorneys. Such statements as I have previously stated at such dates as the records may show, or show, I made in compliance with my counsel at that time.

X Q. 170. I show you Defendants' Exhibit 40, photographs of specific structures. There appear six photographs fastened together. State if you recognize these photographs as taken from any structures or work with which you were familiar.

Mr. Hood: The question is objected to as not proper cross-examination, and as relating to exhibits of defendants which have not been properly proven.

A. I had not the supervision of any of these buildings shown in the photographs. I am not familiar with these buildings, or the buildings from which these photographs were taken.

X Q. 171. Is it correct to say that you first used the structure of your patent in suit as a completed apparatus upon the Timken Building at San Diego?

[fol. 171] A. My statement previously that I had a complete apparatus in the construction of the Majestic Theatre Building, and I made minor details or improvements on parts of equipment which entered into the completed apparatus as I applied in use on the Timken Building, and for use in the application for a letters patent.

X Q. 172. Your deposition given in the case in the Supreme Court of British Columbia seems to have been given in December of 1914. From your cross-examination in that case, as it appears in the copy which I hold, I will read as follows:

"X Q. 31. Assuming for the purposes of the deposition, that the application for the patent No. 144,246 about which we have been talking, was filed February 7th, 1911. Had you, prior to that time, used this apparatus as a completed whole?

A. I had used it.

X Q. 32. You had prior to that time?

A. Yes; and was using it at the time I made my application.

X Q. 33. How long prior to that time had you been so using it as a completed apparatus?

A. Oh, I had been using it, I presume, a year or something like that. I could not be exact.

X Q. 34. Had you been using it in the construction of buildings?

A. Yes, sir; I was using it at the time in the construction of buildings.

X Q. 35. On what building did you first use it as a completed apparatus?

A. It was the Timken Building, I believe, at San Diego, California.

[fol. 172] X Q. 36. When did you first use the apparatus as a completed whole on that building?

A. I thought I just answered your question. I was using it on that building. The exact time prior to the filing, I could not tell you, but I started in with the building a little better than five years ago.

X Q. 37. Then you first used the apparatus as a completed whole on the Timken Building in San Diego, California, when that building was first started, whatever that date may have been?

A. I started that building and used that as a completed apparatus on that, but I had used it in part prior to that on other work.

X Q. 39. How long prior to that?

A. Just to give the exact time, I would have to get records.

X Q. 40. Approximately?

A. Approximately a year."

Do you recall testifying as appears in this quoted matter, and if so, were the statements true?

Mr. Hood: The question is objected to as having no proper foundation in the record.

A. In answer to the question, of the Vancouver statement, I believe the question had reference to a deposition that was taken by me. My statements that I made in 1914, as I previously stated, I believe was in open court, and such statements as I made at that time was correct to the best of my knowledge and understanding.

X Q. 173. Do you not recall giving a deposition at room 503, [fol. 173] Merchants Trust Building, Los Angeles, in December, 1914, during which questions were asked you by Mr. Frederick S. Lyon, and by Mr. W. H. Anderson?

A. I believe I answered in my previous examination here of making a deposition in Mr. Lyon's office; the date I can't recall, or at this time recall his purpose of the deposition, but it was concerning this patent in question.

X Q. 174. And you believe it was about December, 1914?

A. Probably it was along that time; I couldn't state the time, having no interests in the case; I didn't endeavor to fix dates on it.

X Q. 175. The quotation in my X Q. 172 is taken from what purports to be your deposition taken in Mr. Lyon's office, and I will ask you again to look over the quotation and state whether what you said then, or appear to have said then, was a correct statement of facts, to the best of your knowledge and belief?

Mr. Hood: The question is objected to as assuming a fact which has not been proven in this record.

A. Those statements are true, to the best of my knowledge.

X Q. 176. And you have carefully read over the quoted matter and understand it, have you?

A. I believe I understand it, to the best of my knowledge.

X Q. 177. I continue the quotation as follows:

"X Q. 41. What portions had you used?

A. Well, I had used part by making swivel devices of pipe and

tried it in a small way on work as to whether it would prove my claims for it.

[fol. 174] X Q. 42. What portions had you used in that way according to your best recollection, prior to the work on the Timkin Block?

A. I had used these receiving bins, discharging bins, these little swivels, the principles that make up the completed system as we have been working on it ever since, or using it, I mean.

X Q. 43. When, for example, did you first use the tower for the purpose of distribution?

A. I could not get that definitely.

X Q. 44. With reference to the Timkin Building, was it before or after?

A. I had used it prior to the Timkin Building. I had used the tower principle for a couple of years, or possibly three years prior to the Timkin Building. I have used the tower further back than that, but not as a completed principle with this. But that was leading me to the making up of these principles."

Please read over this quoted matter and state whether what you appear to have said at that time was correct.

Mr. Hood: Question objected to on the ground that the necessary context has not been quoted.

A. To recall what I said at that time, I can't recall it. It has been quite a while since I made the statement, and whether I know whether I was interrogated on other work I could not state,—together with this line of interrogation,—at that time. The best I recall, I was called to Mr. Lyon's office and was briefly interviewed on something pertaining, as best I can recall it, as previously stated, and [fol. 175] what statements, the best I can recall, at the time, I endeavored to give a correct understanding or statement; as I recall it, only a brief interview.

X Q. 178. And would you now wish to modify your answers which appear in the quoted matter?

A. Possibly it would be better that I would illustrate at this time along such lines that I might have concluded such statement. In the mention of using a tower, or construction for such work, would be for a brick hoist, means of hoisting up brick over the tower, or something along that line; but it was not for the purpose of concrete construction work. And I would prefer, if that is the inference of this purported interview, to correct that. It led my ideas which I believed at the time I was conveying to a fact fixed in my mind, that I could, when opportunity presented itself to me sufficient, through an apparatus in my mind for the handling of concrete construction, that I could use it, by making mechanical equipment or receptacles by which to convey my material to higher elevations in what I termed the superstructure or a completed building in its entirety of concrete construction, and as I have previously stated, I did not have the opportunity of fully developing this purpose and

apparatus until 1907, after interviewing with Mr. Hugh W. Bryson, of the F. O. Engstrum Company, in the city of Los Angeles, California, who was willing to finance and give me a free hand to fully develop these ideas. Now, if any deposition that has been taken in question is other than this, I wish to modify it.

X Q. 179. The specific question I put to you was as to whether the statements quoted and purporting to be your testimony, according [fol. 176] to your present knowledge and memory, are correct in substance?

A. I would say yes.

Mr. Barton: Cross-examination closed.

Cross-examination closed.

Redirect examination (without waiving objections stated to questions on cross-examination).

By Mr. Hood:

R. D. Q. 180. Mr. Callahan, did you notice that in the Smith patent, to which your attention was called on cross-examination, it is proposed to mount the tower structure and the hoisting apparatus, that is, the motor, on a platform which was to be supported on a turntable, so that the whole tower could be rotated around its vertical axis?

A. I noticed in the drawing of the letters patent here presented to me, as described, to be a platform with a tower, means of hoisting, and mixer, to be on the platform, as it may be rotated, or in other words, turned or revolve around.

R. D. Q. 181. Do you think that that would be a practical construction?

Mr. Barton: This being an expert question, it is submitted that statements should not be put into the mouth of the witness.

A. I would not.

R. D. Q. 182. In your cross-examination, in answer to X Q. 110, it would seem that this answer might be construed as a statement that you had taken photographs of the Timken Building apparatus [fol. 177] from the beginning of the work. Have you any photographs now in your possession other than Exhibit C, of the Timken Building apparatus?

A. As I have previously stated, this is the only photograph that I have of the apparatus in question. The other photographs I have is of the building under course of its construction, as I have previously stated, and of the finished building, but not showing the apparatus.

R. D. Q. 183. Did you take any photographs at all of the Majestic Building, or the apparatus which you say you used in the construction of that building?

A. As previously stated, I had taken no photographs of the Majestic Theatre Building, or of apparatus.

R. D. Q. 184. You have had quoted to you, in X Q. 169, a certain statement which it was said you made in a preliminary statement in connection with Interference No. 30,533, to the effect that you completed a certain apparatus about the 11th of October, 1908, and that you began the building of this apparatus the 18th of September, 1908. What apparatus was it that you had in mind when you made that statement which you made?

A. In speaking of the apparatus, as I have endeavored to demonstrate to you conclusively, was completed at the Majestic Theatre Building, and minor details of mechanical equipment or purpose in more fully developing of the apparatus, that is, mechanical, understand me, construction of equipment and parts of equipment; but I would repeat that the completed system, in its purpose, was perfected on the Majestic Theatre, and this work that I have previously spoken of doing and applying this method of handling concrete at the later dates was given in pursuance, and as the records will show, [fol. 178] for application of letters patent; but, I will repeat again, the completed system for this work was on the Majestic Theatre, down during the early part of 1908; as stated, I commenced the work of fully developing the equipment to carry out, which proved to a success the handling of concrete for superstructure of work.

R. D. Q. 185. And what particular apparatus did you mean to indicate as having been begun in September, 1908?

A. That is the apparatus—I wish to make this clear to you, if I can—were in parts of various mechanical makeup that I may have improved on in the way of mechanical, we will say, a pan, or some special little device in varied forms that practiced along our line of work, for instance, on the Timken Building, where I could pick up improvements over the first work, what the equipment might be. At times the varied orders of your material would necessitate the changing of the order of a certain piece or device, or method for operation. That, in my statement, that was in question, may be what I termed in kind of an explanatory way of finishing, but the system and equipment first spoken of was the original and completed system first carried out and developed by me.

R. D. Q. 186. In the portion of your alleged deposition in the British Columbia case which comprised X Q. 31 and your answer, your attention was called to the fact that the Canadian patent in suit there was based on an application which was filed February 7, 1911, and you stated in your answer to X Q. 33, apparently, so far as the quoted matter is concerned, that you had used the completed apparatus about a year prior to that date, that is, about a year prior to February 7, 1911. At the time you were answering that question, did you have in mind the filing date, February 7, 1911, of [fol. 179] your Canadian application, or the filing date of your United States patent?

A. I can't recall at this time, correctly, I believe, the letters patent which I applied for, and was allowed, and after the transfer of my rights and title to Mr. Bryson previously mentioned, in this case,

the application applied for in the Canadian right was applied for by and through other parties than myself, but approved of by me for application, the best I recall it. That was applied for through and from a letters patent that had been granted me in the United States.

R. D. Q. 187. Then you meant that you had had the apparatus in use about a year prior to the time you filed your application in the United States, that filing being January 21st, 1909. Was that right?

A. I wish to state, and if possible to make clear to the counsel on both sides of this case, at the present time, that I had used continuously this apparatus as previously stated on the Majestic Theatre Building from that date on down irrespective of the applications that I was making; so as to make it clear.

R. D. Q. 188. And that you used that apparatus on the Majestic Theatre Building very close to the 1st of January, 1908?

A. Yes. I will state again that it was only a matter, as previously stated, of just a day or so, or a few days, it had only taken a short time to place the equipment and the tower, our forms being in place, for the operation and pouring of concrete, it was either, as I can recall, about the last day of December, 1907, or January 1, or not later than 2, I will place it; I will have to have the records to be exact, but I can recall the time, I can recall that everybody con-[fol. 180] nected with the work was very anxious to see the results that I proposed to develop, and I was bending every effort to make good of my assertion that I had set forth in the interview with Mr. Bryson previously referred to of what I could accomplish. And it was not later than January 2nd, but I believe, since reflecting in my mind, that it was about—I will say January 1; either the last of December or the 1st day, I will place it; that is the best I can recall it, and I am quite positive.

R. D. Q. 189. At the time you were supposed to have given this deposition from which Mr. Barton has quoted certain parts, had you had an opportunity to check up any records which would give you the approximate time when the Majestic Theatre apparatus was built and put into use by you? I mean, back in December, 1914, when you say you had this cursory conference with Mr. Lyon.

Mr. Barton: Attention is called to the fact that this plaintiffs' witness, and a witness in position to be quite interested, if not a partisan for plaintiffs—the leading character of the question is accordingly objected to.

A. I had no opportunity; in fact, as I recall it, I was called over the telephone by Mr. Bryson to see him at Mr. Lyon's office, and when I got there he had some little notes—or talk over some little notes, and he asked me if I would give a statement or something concerning the gravity system.

Redirect examination closed.

[fol. 181] Recross-examination by Mr. Barton:

R. X Q. 190. Claim 2 of the Smith patent referred to reads as follows: "In a device for distributing concrete, means for elevating the concrete to a point above the plane of the work to be performed; a hopper adapted to receive the concrete so elevated; a primary distributing pipe revolvably mounted beneath the hopper; a secondary distributing pipe revolvably mounted beneath the mouth of the first-named distributing pipe, and means for controlling the flow of concrete from the hopper to the first-named distributing pipe, substantially as described." As a description of a mechanism, do you understand it?

Mr. Hood: Question objected to as not proper recross-examination.

A. Yes.

Mr. Barton: The photograph referred to by this witness as marked—The photograph referred to in X Q. 138 is offered in evidence as Defendants' Exhibit, Photograph Hudson Bay Company Building, Vancouver, B. C., No. 45.

Mr. Hood: The exhibit is objected to on the ground that it has not been properly proven; and that it is irrelevant and immaterial.

Redirect examination, without waiving objection, by Mr. Hood:

R. D. Q. 191. Mr. Callahan, in this photograph, Exhibit No. 45, the first trussed chute section, that is, the uppermost chute section, which appears at about the middle of the photograph, appears to be [fol. 182] supported at its lower end by block and tackle, which extends upwardly toward the right. There is no connection between the lower end of this first chute section and the tower which carries the hopper, is there?

A. There is not.

R. D. Q. 192. Apparently both the upper trussed chute section and the second trussed pipe appear to be supported at their lower end by block and tackle which are apparently suspended from the independent tower structure at the right hand side of the photograph. Is that right?

A. That is correct.

R. D. Q. 193. Do you think that an apparatus of this kind, in which an independent tower structure is provided for supporting the block and tackle which I have mentioned, is as good an arrangement as one in which the chute sections are suspended entirely from the other tower in which the hoist skip is mounted and upon which the hopper is supported?

A. Why, it is very clearly and distinctly to be perceived, even from a lay mind, of ordinary understanding, around a building, that to have a second tower for the means of controlling a pipe line system, or any other system for pouring concrete, which is only in a fixed way from one point of distribution to another, when you could have your equipment in a practical way that you could revolve

it or oscillate it and turn it so as to distribute your materials in any and varied parts so desired to be reached, of your work. And it is not practical, as I have stated.

Mr. Hood: That is all.

[fol. 183] Recross-examination by Mr. Barton:

R. X Q. 194. In answer to X Q. 146 you said, "There is not much difference whether you operate with a cable or boom, so you can have an oscillating boom in your pipe line, which causes an even flow or distribution of your concrete. It can operate as well on a cable" * * * and so forth. I show you this entire answer to X Q. 146 and ask you if you wish to modify it in any way.

A. In answer of this question, the reference that I have or had in this previous statement of fixed lines, in carrying concrete on a cable of long reaches, where it would be too far to reach with a boom pole, but in all cases I have preferred, and wish to have it understood, to use the boom pole even up 110 feet in length for a more practical and speedier way of the progress of work; and I only used the cable or the fixed lines which we can carry the concrete with an oscillating movement the long distances which I have stated, of even to a distance of 500 feet from the operating tower. The concrete so carried or transferred, if it is properly controlled to the elbows or bends at the far ends of the outward end of our pipe lines, is so handled that the concrete is recollected in such plastic condition as to avoid segregation or separation, and I tried to make it clear to the counsel in question that the plastic consistency of the concrete is harder to obtain on the short leads of these pipes, and is not as practical; and you can't hold the proper plastic consistency as well as on the boom line or the principle of oscillation as I have tried to set forth previously.

[fol. 184] R. X Q. 195. Is it your position, then, that the apparatus shown in this photograph, Exhibit 45, does not contain what you consider your invention?

Mr. Hood: The question is objected to as incompetent, and the witness is instructed not to answer the same. No proof has been made of this photograph, and it is a question for the court to determine whether a particular apparatus "contains the invention."

Mr. Barton: The witness has already been asked by his counsel expert questions, and it is submitted that he may properly state what he considers is invention, and may also state properly whether he finds it, or thinks he finds it, in a given structure.

Mr. Hood: It is not competent even for an expert witness to express such opinions as have been called for, and the instruction not to answer is repeated, unless and until the court having jurisdiction of this witness requires the question to be answered.

A. I decline to answer, upon advice of counsel.

R. X Q. 196. Do you find in this photograph, Exhibit 45, a boom such as is shown in your patent?

Mr. Hood: Objected to as immaterial.

A. I have stated previously, it seems from the photograph upon the tower to the right it shows what purports to be a little boom pole, as well as I referred to on the diagonal corner, is still to the right as I hold this photograph, which seems to show the identical same seat or principle as shown on the first-mentioned to the left on the corner of the tower, as I am holding the photograph, only tends to my mind to show a construction boom or device that may be used, or [fol. 185] may have been used, for outside handling of materials separate and apart from the pipe line system or apparatus which has been in question, or is in question. I see no connection of the use of this boom other than has been commonly in any ordinary work.

R. X Q. 197. Then do you, or do you not, find in this photograph, such a boom as you show in your patent?

Mr. Hood: Objected to as immaterial.

A. I have used a similar little pole, boom pole, to stiffen or to carry for sections of my works, for instance, the Majestic Theatre building. This boom pole, or a like pole, can and has been used as any other boom pole that would be built, that you may call my attention to, in the lattice construction, like I used on the Timken Building. I also showed what I call a yard arm or round pole used there on the Timken Building, in the photograph which I have presented in evidence here.

Deposition closed.

Lee Callahan.

(Thereupon an adjournment was had until Monday, March 14, 1921, at 8:30 A. M., at the same place.)

Los Angeles, California,
Saturday, March 12, 1921—10:00 a. m.

(Met pursuant to adjournment. Same counsel present.)

EDWARD ANDERSON, a witness called on behalf of plaintiffs, having been first duly sworn, deposes and says as follows:

[fol. 186] Direct examination by Mr. Hood:

Q. 1. Please state your name, age, residence and occupation?

A. Edward Anderson; 1114 Hoover Street, Los Angeles, California; age, 71; occupation, carpenter.

Q. 2. Please state whether or not you ever did any work in connection with the erection of the public school building at Union and Cabanne Streets, St. Louis, Missouri.

A. Yes; I done foundation, concrete foundation, and fireproofing.

Q. 3. When was that building erected?

A. In 1906 and part of 1907.

Q. 4. Is that building generally known in St. Louis as the Clark School?

A. Yes, sir.

Q. 5. Have you any document establishing the fact that you were engaged in work on the Clark School?

A. Yes; this letter from Mr. Ittner; he was the head of the School Board, and this letter states that I had erected, that is, done the fire-proofing on the Clark School. I also have my time-book.

By consent of counsel, the letter produced by the witness is read into the record at this point, to have the same force and effect as if the original were made an exhibit; it being stipulated that if Mr. Jones shall ask to see the original, counsel for plaintiff will submit it to him.

[fol. 187] Board of Education of the City of St. Louis, Office of the Commissioner of School Buildings

St. Louis, October 9, 1908.

To whom it may concern:

The bearer, Mr. E. Anderson, was in personal charge of reinforced concrete work on the Ellendale, Clark and Webster Schools for the Board of Education, erected under the superintendence of the undersigned. Mr. Anderson understands thoroughly this class of construction and I take pleasure in recommending him to those contemplating such work.

Your respectfully, (Signed) Wm. W. Ittner, Commissioner of School Buildings.

Q. 6. Please describe the manner in which the concrete work of the Clark School was put in place.

A. The building fronted on Union Avenue, with Cabanne running down hill right smart. Now, a mixer and hoist was placed about half-way down on Cabanne. That made the mixer lower than Union Avenue, you see. We put—made an incline so as to wheel the material up in the hopper above the mixer. Then the concrete was taken out from underneath the mixer and wheeled around into a brick elevator, and taken up on the different floors with the elevator, the wheelbarrow being on the elevator. When we got on the floor we wanted to get on, wheeled the wheelbarrow off on the floor and go to [fol. 188] the place where we want to dump it and dump it on the floor. That is the way all the concrete was put on the building. I want to explain right there while I am at it, that this building, in fact, all the school buildings at that time, had brick walls; no fire-proofing in them, only the floors; so we had easy access to the surface for our concrete, you see. We didn't have to fill any walls with concrete; they were all brick.

Q. 7. Did you have personal charge of the placing of all of the concrete in this Clark School?

A. Yes, sir, I put in the foundation for Mr. Gerhard. That was not in my contract, but I done that, and he was charged up the actual expenses of putting the foundation in, together with my salary; and after the foundation was put in, then I took charge of the fireproofing as a sub-contractor.

Q. 8. By fireproofing you mean the reinforced concrete floor slabs?

A. Yes; and roof.

Q. 9. Was all of the concrete of this Clark School placed by you by means of wheelbarrows?

A. Yes, sir. We had no other process of getting the concrete on the floors except to hoist in a wheelbarrow.

Q. 10. That is, your wheelbarrows were charged with the concrete mixture from the mixer; then wheeled to the hoist, which had a platform elevator, and the filled wheelbarrows were then hoisted to the desired floor level, and from there wheeled and dumped at the point needed.

A. Yes, sir.

Q. 11. Did you use new or old wheelbarrows on this job?

A. It was all new, at this school.

[fol. 189] Q. 12. In what condition did the wheelbarrows come to you on the job?

A. They come knocked down, that is, not put together; we bought them right direct from a wholesale concern, and had to put the bolts in and connect them up after they got to the building.

Q. 13. Who assembled the wheelbarrows?

A. Oh, some boys I had there, and my son, and two or three other boys; I had several men working there at the time.

Q. 14. You mean your son Hooper Anderson?

A. Yes; Hooper.

Q. 15. He lives here in Los Angeles, and is sick in bed today, is he not?

A. Yes, sir.

Q. 16. It has been testified in this case that all of the concrete of this Clark School at Union and Cabanne Streets was placed in position by means of an apparatus like that shown in defendants' Exhibit No. 31, which is a photograph, and a copy of which I show you. This photograph showing a tower provided with a hopper delivering into a trussed wooden spout. What have you to say as to whether or not an apparatus like this apparatus shown in the photograph, was used in the erection of the Clark School?

A. Nothing of the kind, sir.

Q. 17. You are absolutely positive of that, are you?

A. Yes, sir; none of the schools I built, no apparatus like that; I used wheelbarrows on all of them.

Q. 18. On what other school buildings in St. Louis in which there was reinforced concrete work did you work?

A. McKinley High School; Elieardville School; Clark School; and the Webster Schools; that is four schools that I put the reinforced concrete in.

[fol. 190] Q. 19. When was the Webster school built, as compared with the time of building the Clark School?

A. Started the Webster School about a month or so before we finished the Clark; I have got the time book for both of them here. Here is the beginning of the Clark and the end of the Clark, and the beginning of the Webster.

Q. 20. And what does your time book show as to the dates of your work on the Clark School, and of the Webster School?

A. The beginning of the Clark School was February 24, 1906; ended the Clark School about the middle of April, 1907. We began the Webster School, February 15, 1907.

Mr. Hood: The time books produced by the witness are submitted to counsel for defendant.

Q. 21. Did you furnish to Mr. Gerhard any estimate of the fire-proofing on the Clark School?

A. Yes, sir.

Q. 22. What was the amount of that estimate?

A. I will have to read it out of my book; I can't remember. Over \$23,585.

Mr. Hood: That is all, Mr. Barton.

Direct examination closed.

(Cross-examination waived.)

Edward Anderson.

(Thereupon an adjournment was had until 1:30 P. M.)

[fol. 191]

Los Angeles, California,
Monday, March 14, 1921—9:00 a. m.

(Met pursuant to adjournment.)

(Same counsel present.)

HOOPER O. ANDERSON, a witness called on behalf of plaintiff, being first duly sworn, testified as follows:

Direct examination by Mr. Hood:

Q. 1. Please state your name, age, residence and occupation?

A. Hooper O. Anderson; age, 32; now residing at 3447½ South Hope Street, Los Angeles. Freight agent, Pacific Steamship Company.

Q. 2. What relation are you to Edward Anderson, now living at 1114 Hoover Street, Los Angeles?

A. Son.

Q. 3. Did you do any work on the public school building at Union and Cabanne Streets, St. Louis, Missouri, now known as the Clark School?

A. Yes, sir.

Q. 4. What was that work, when did it begin, approximately, and how long did you work on the building?

A. To the best of my knowledge and recollection, actual construction began in February, 1906, and I was employed on this job until January, 1907. Operating concrete mixer, and also running elevator hoist.

Q. 5. What sort of an elevator hoist did you have on that construction work?

A. A two-cage lift for the accommodation of wheel barrows only.
[fol. 192] Q. 6. How was the concrete in that building put in place?

A. Discharged from mixer in the wheel barrow, conveyed to various floors by means of this elevator hoist, and dumped direct from wheel barrow into beams or on floor panels.

Q. 7. Was all of the concrete of this Clark School placed by the wheel barrow method which you have described?

A. Everything above foundation, yes.

Q. 8. Was the wheel barrow method used on the foundation?

A. The greatest extent was used by wheel barrows. The only other method being a wood trough used from mixer to foundation as convenient.

Q. 9. About how long was that wood trough?

A. Constructed of 1 by 6 material, two pieces of 1 by 6 nailed together, 16 feet long—not exceeding 16 feet.

Q. 10. And that was used for a short time right close to the mixer?

A. Yes, right near the mixer, not any further away than 16 feet, the length of the trough.

Q. 11. Did you use, or was there used, on that apparatus, or at that site, an elevator bucket in which the concrete was deposited and elevated in the tower?

A. No, sir.

Q. 12. What is your recollection relative to the wheel barrows which you used on that job?

A. The question is not clear; I don't fully understand you.

Q. 13. Were the wheel barrows that you used new or old?

[fol. 193] A. These wheel barrows were purchased new, knocked-down. Upon arrival on the job I assembled them, and they were used throughout that job.

Q. 14. I show you Plaintiff's Exhibit No. 31, "Photograph of Franklin School, May 7, 1910." This photograph shows a tower from which is extended a trussed wooden trough. Was any such structure used at any time during the erection of the Clark School?

A. No such structure as you have described as shown in this photograph was used on the Clark School during the year of 1906.

Q. 15. Was any such structure used in the erection of the Clark School during the time you worked on it?

A. No, sir.

Direct examination closed.

Cross-examination by Mr. Barton:

X Q. 16. What does the photograph, Defendant's Exhibit 31, show? Please describe it in a general way.

A. The method used as shown in this photograph would necessitate an automatic dumping bucket being used, which would dump into a hopper and then conveyed to desired locations either through a wood or metal spout.

X Q. 17. In 1906 you had a tower, did you?

A. Yes, sir.

X Q. 18. And you had a trough that you ran the mixed concrete in for something like 16 feet; is that correct?

A. Yes, sir; on the foundation only; an open trough.

X Q. 19. Do you remember any trouble that they had in using the trough?

A. No trouble.

[fol. 194] X Q. 20. It carried the soft or mushy concrete to the place where it was wanted, all right, did it?

A. Yes.

X Q. 21. Give me the names of some of the other boys who worked on that job in the year 1906, if you recall them, and give their residences.

A. Ed Anderson, 1114 North Hoover Street, Los Angeles; my father, W. C. Anderson, Corona, California; brother. Unable to recall any other names.

X Q. 22. Do you know if it was common at that time, that is, in 1906, to convey the mush in constructing a concrete foundation or building, by letting it run down in a trough?

A. To my knowledge, this was not commonly used or generally used. We used it as a method of convenience account of the mixer being placed within few feet from foundation wall.

X Q. 23. Was the mush that you put into the wheel barrows mixed the same as that that was put into the trough?

A. Yes.

X Q. 24. When did you come to Los Angeles to live?

A. 1910.

X Q. 25. Did you ever know a man by the name of George Eberhard as connected with the F. O. Engstrum Company?

A. No.

X Q. 26. Did you ever know a man by the name of Theodore Emtman, also connected with that company?

A. No.

X Q. 27. Did you ever know or hear of Arthur L. Smith, a cement man connected with work in St. Louis?

[fol. 195] A. I cannot recall ever having known him.

Deposition closed.

Hooper O. Anderson.

(Officer's certificate and statutory transmission waived, for defendants.)

(Adjourned to meet on further notice.)

[fol. 196]

STIPULATION RE TESTIMONY

It is stipulated that if William B. Ittner were called and examined as a witness on behalf of plaintiffs he would testify that he is

a citizen of the United States residing at St. Louis, Missouri, and has been continuously in practice as an architect since long prior to 1906 that he has designed and produced plans and specifications for many buildings, particularly school buildings, which have been erected according thereto in many parts of the United States; that he was the architect of the Public School in the City of St. Louis at Union Avenue and Cabanne Street, known as the Clark School; that as a part of his duties as such architect he visited the site from time to time during the progress of the building and noted the methods pursued and apparatus used during such building; that he has no recollection of any such apparatus as that illustrated in Defendants' Exhibit 31 having been used during the erection of the aforesaid Clark School, and that if such an apparatus had been so used he is of the opinion that a recollection of it would have remained with him because such an apparatus, while now quite common, was totally unknown to him in 1906 during the progress of building the Clark School; that he is positive that no such apparatus was used in fabricating the Clark School; and that he has no acquaintance with any of the parties to this cause and is not now and since 1910 never has been engaged as a contractor or builder.

It is further stipulated that if P. J. Curran were called and examined as a witness on behalf of plaintiffs, he would testify that [fol. 197] he is a citizen of the United States, residing at St. Louis, Missouri, and is now employed on the Municipal Docks of the City of St. Louis; that during 1906 he was in the employ of the Board of Education of the City of St. Louis and was the inspector for said Board of the Public School building at Union and Cabanne Avenues known as the Clark School; that he was in daily attendance at that building site; that the concrete for foundations was placed by dumping the concrete from the mixer into wheel barrows and wheeling it to the desired locations; that he does not recall how the concrete was placed in the building above the foundations, and that his recollection is that there was nothing in particular in connection with the concrete work to call his attention especially to the method of handling the concrete.

That witness has no acquaintance with any of the parties to this cause, has no interest in the present litigation and is not now and never has been engaged as a contractor or builder except as an inspector.

Arthur M. Hood, of Counsel for Plaintiffs, Indianapolis,
Indiana. G. Boyd James, of Counsel for Defendants,
Chicago, Illinois, April 15, 1921.

[fol. 198] STIPULATION RE TESTIMONY OF R. M. MILLIGAN

It is hereby stipulated and agreed by and between counsel for the respective parties that if R. M. Milligan were called and examined as a witness on behalf of the plaintiffs he would testify that he is of mature age; that he is Commissioner of School Buildings of the

Board of Education of the City of St. Louis, Missouri; that he has charge of the records relating to the erection of school buildings in the city of St. Louis; that there is, and has been since 1907, only one colored high school in the city of St. Louis and that it is known as the Sumner High School Building; that he has examined the records of the Board of Education relating to the erection of said building; that the general contract known at Letting No. 1218 for said building was let to Pelligreen Construction and Investment Company, September 8, 1908, and final payment was made March 3, 1911; and that he has examined said records relating to the building of the Franklin School, and that the general contract known at Letting No. 1280 was let June 28, 1909, to E. C. Gerhard Building Company, final payment being made April 13, 1911.

Arthur M. Hood, Counsel for Plaintiffs. George Boyd
James, Counsel for Defendants.

July 25, 1921.

[fol. 199] IN UNITED STATES DISTRICT COURT

[Title omitted]

Before Hon. Oliver B. Dickinson, J.

Philadelphia, Pa., October 3, 1921.

Present: Cyrus N. Anderson, Esq., and Arthur M. Hood, Esq., representing the plaintiffs; George B. Jones, Esq., and Thomas H. Sheridan, Esq., representing the defendants.

Counsel for defendants moved to file an amendment to answer. The Court grants the motion with respect to all the features of the amended answer other than the cross-bill feature, and leave to file that amendment is denied, and an exception allowed to the defendants.

PLAINTIFFS' EVIDENCE

Mr. Hood: I offer in evidence the patent in suit, No. 948,719, marked "Plaintiffs' Exhibit N."

I also offer in evidence as plaintiffs' exhibits, photographs A, B and C, which accompanied the Pierce affidavit, the same to be marked [fol. 200] respectively, "Plaintiffs' Exhibits F, G and H, Defendants' Structure," these photographs having been admitted by the defendants in their answer.

I also offer in evidence photographs A, B, C, E and F, which accompanied the defendants' affidavit by Prettyman in connection with the preliminary injunction proceeding, those photographs to be marked respectively "Plaintiffs' Exhibits I, J, K, L and M, Defendants' Apparatus, Subsequent to Bill of Complaint."

EDGAR H. THOMPSON, having been duly sworn, was examined and testified as follows:

By Mr. Hood:

Q. 1. Will you please state your name, age, residence and occupation?

A. My name is Edgar H. Thompson, 41 years of age, and my occupation is superintendent of United States Construction Company, 841 Broadway, New York, at the present time residing in Mount Vernon.

Q. 2. State briefly what your duties are at the present time, especially in connection with the fabrication of re-enforced concrete buildings?

A. My duties at the present time are the supervising of all the re-enforced concrete connected with the Edison Light and Power Company at Port Morris, New York, where we are now installing a power plant.

Q. 3. How big a job is that both in area, height and approximate cost?

A. The size of the building is 480 by 370, total height over all 149-6, total cost of job complete including equipment, approximately thirty-eight million dollars.

[fol. 201] Q. 4. And you have entire charge of the fabrication of that building?

A. I have entire charge of the fabrication of that building and the installing of the equipment with the exception of the generators.

Q. 5. What has been your occupation briefly during the past six, seven or eight years?

A. I have been the superintendent of re-enforced concrete construction through the Middle West, Detroit, Saginaw, through Michigan, as far south as Kentucky, during that period of time, and at all times supervising the construction of buildings.

Q. 6. What, if any, experience have you had during the past six or seven years in the use or utilization in the fabrication of concrete buildings of an apparatus similar to that which is illustrated by this model before you where there is a tower, a hoist, a skip and a hopper, which is carried by the tower, and which is raised from time to time on the tower as the building progresses, a chute connected with the hopper in such a way as to receive the hopper discharge, and supported on the tower, and a boom, which is also supported on the tower capable of being swung back and forth, and of being raised from time to time as the building progresses, and that boom supporting the first chute section.

A. Well, at the present time, I have two of those concrete plants installed on the work.

Q. 7. Have you had any experience during the period mentioned with an apparatus embodying the tower, the skip, the hopper and chutes supported by other means, such, for instance, as trestle work on the building, or by a beam suspended from cables running from the tower and anchored to dead men?

A. I have had experience with cables running from the tower anchored to dead men within the last five years.

[fol. 202] Q. 8. How does the apparatus which embodies the swinging boom supporting the chute sections compare in usefulness and economy of operation with a similar apparatus in which there is no boom and in which the chutes are supported in some other way such, for instance, as being suspended from dead man cables?

A. There is only an occasional building you can use a dead man cable on. Now, there are so many jobs, that it is next to impossible to install cables, due to being tied up with room area around your building, that I would not say that they would compare at all. In fact, the construction of a cable with chutes attached to it is a much more expensive plant to install and to operate than a boom counter-balanced which is known amongst construction men as a counter-balance chute.

Q. 9. What advantage, if any, is there in an apparatus for chuting concrete of such character that the space over which the concrete is to be deposited is left free from obstruction such as trestles, chute supporting trestles, things of that kind?

A. The advantage in that particular boom and chute means that you can pour approximately one hundred feet away from your tower. For instance, you are on a building, and you could get fifty to seventy-five feet of your re-enforcing steel down, and you can begin your operation, and still continue your operation of laying steel and building forms, due to the freedom you have got around your tower. In other words, there is nothing in your way. You are at no disadvantage to construct your re-enforcing steel or build the forms.

Q. 10. Is it easier to shift a boom-supported chute from one level to another than it is to shift a series of chutes that are supported on trestles, supported on a dead man cable?

[fol. 203] A. Yes, I should say it was.

Q. 11. During the past few years have you had any experience in the distribution of concrete by means of an apparatus which comprises a tower, a skip, a hopper, so arranged that it would deliver into buggies or wheelbarrows, the concrete then being wheeled from the tower to the points of deposit?

A. I have.

Q. 12. How does that method of operation compare as to cost with the operation of mechanism where the chutes are supported by swinging the boom on the tower?

A. At the present prices of labor, it is about two-thirds higher, by wheeling or transporting your concrete in either buggies or barrows.

Q. 13. What difficulties, if any, are experienced in the buggy or wheelbarrow method of transportation in connection with the re-enforcing bars and the electric wiring, plumbing, piping, and so forth, which is to be embedded into the concrete?

A. Take for illustration, a building approximately one hundred feet long. You naturally work in a pretty small area. Now, the

tower is generally placed in the center of a building, as nearly as you can get it. That means that, before getting started pouring any concrete, you must have your steel laid past the discharge point of your bucket on your tower. In other words, it makes it very inconvenient to get your reenforcing steel through under your runways, without advancing the cost of the laying of the steel. Under those conditions, we generally lay our steel beyond the point from where we are at first going to distribute the concrete, because it is almost impossible to install the steel under these runways after they are once put down.

Q. 14. After you have your runways installed over your re-enforcing steel, and other parts that are to be embedded, do you have any difficulty with the men running the buggies or wheelbarrows off the runways and disturbing the re-enforcement, and so forth?

A. We have.

Mr. Jones: I object to the leading nature of these questions. We are very glad to have all of these facts brought out, but we suggest that the question be presented in a little less leading form.

The Court: Let me make this inquiry. Is this testimony directed to the utility feature of the invention?

Mr. Hood: Yes, sir.

The Court: Do you propose to put in evidence that the defendant has used the features which you claim to have patented?

Mr. Hood: Yes.

The Court: You need not spend much time over the question of utility. If they have used what you claim to be your invention, it will hardly lie in their mouth to dispute that question, of whether it is a good thing to use, or not.

Mr. Hood: They have had witnesses who testified that it was not any good at all, and I think it is advisable to have this testimony.

The Court: Use your own judgment.

Mr. Hood: We will not take up much time with it.

The Court: Ordinarily it hardly amounts to very much for a man to use the claimed invention of another, and then to say it is of no use.

Mr. Jones: We have not taken that position. In fact, we are ready to admit that it is a useful thing, if that will save any time.

Mr. Hood: May we understand, then, Mr. Jones, that you are willing to admit that a structure such as embodies a boom swinging [fol. 205] from a tower and supported by a tower, and itself supporting a chute section, which is also carried by the tower, is useful as compared with a structure where the chutes are supported by trestles, or tied to the building framework or supported by or from guy lines from the tower?

Mr. Jones: We will admit that it is useful, and is a great convenience in certain special cases. I think that is all you require, is it not?

Mr. Hood: That is all, yes.

Cross-examination by Mr. Jones:

X Q. 15. How long did you say you had experience in re-enforced concrete construction work, or concrete work in general?

A. I have been in concrete work, starting on the basis of sidewalks at the age of twenty-two years to the present date. A matter of nineteen years. Eighteen and a half to nineteen years, on re-enforced concrete work.

X Q. 16. Is it a fact that the concrete used today is wetter or dryer than it was say ten or fifteen years ago?

A. Wetter.

The Court: What do you mean by that? More liquid?

Mr. Jones: More water in it.

The Court: More liquid?

Mr. Jones: Yes.

By Mr. Jones:

X Q. 17. Do you recall about how many years ago wet concrete came into use as distinguished from the so-called dry concrete?

A. My experience might vary a little there from your data. I [fol. 206] was through the Middle West at that time. During the year 1909 was practically my first experience with pouring, as we call it, massed concrete, that is, dense enough to place itself around re-enforcing steel, without any tamping.

X Q. 18. Do you wish us to infer from one of your answers that the buggies are still being used in special cases under certain conditions?

A. Undoubtedly they are.

X Q. 19. In building re-enforced concrete constructions, is it not a fact that many special problems arise, and that the apparatus used is adapted to a particular job, and is changed from time to time, depending on the conditions to be met?

A. You mean with regard to the booms, towers and chutes? Is that what you are referring to?

X Q. 20. Yes, the apparatus in general.

A. There are no two construction jobs that are absolutely alike, at least I have never been able to find them.

X Q. 21. Some of them vary quite materially?

A. Yes. On the particular job that I mentioned a few minutes ago, it would be impossible to use any other rig, to chute the concrete over, but that particular design right there. It would be impossible to use any other rig successfully. (The witness refers to the model which is before him.)

X Q. 22. The runways for the buggies you have referred to are nothing but planks?

A. That is right.

X Q. 23. Thrown over the floor?

A. Planks set on horses, on horses approximately sixteen inches high, built like a carpenter's horse.

X Q. 24. Or they may be laid, may they not, directly over the

re-enforcing bars which in turn are supported by these secure spacing devices?

[fol. 207] A. No, sir, not if he was a good construction man, he would not allow the planks to be laid over the re-enforcing steel.

X Q. 25. It is preferable to block them up slightly?

A. They must be blocked up in order to keep your steel in place.

X Q. 26. When you first saw the apparatus used involving a chute hung from a tower by a boom, was the chute fixed in position during the pouring of the concrete in a particular location, and then swung to some other position? In other words, was it fixed for the time being, and then moved to another position and held, and then possibly to some other position of adjustment?

A. The very first chute I ever saw installed having a boom, the boom was in a fixed position, allowing a drift line enough so that the chute could be swung in various positions.

X Q. 27. What I meant was, was that swinging done at intervals, that is, you would first pour in one place, and then swing your boom, and pour in another place?

A. It is always done at intervals with any boom.

X Q. 28. Was the chute wholly supported by the boom on this first occasion you spoke of, do you recall?

A. Yes, wholly supported by a boom.

X Q. 29. About when was that?

A. You might call this a boom, and you might not. The boom was in a fixed position, with a line hanging to it. That was in 1914, I think. I could not say for certain; 1913, I believe. It is simply a fixed timber off the head of the tower, with a line hanging to it. That was in 1913, I believe.

X Q. 30. You mean a horizontal timber at the top of the tower, or an inclined timber?

[fol. 208] A. A timber run right through the head of your tower, coming out, as you see, about where that block is, then you dropped a cable down off of that, attached it to the end of the chute, and that allowed your drifting position.

X Q. 31. Do you know whose apparatus that was?

A. Yes, it was Insley's chute. I rigged it up myself. I rigged it up myself, or it was done under my supervision, in order to build this particular job.

X Q. 32. You mean you simply bought the sheet metal chute from Insley and devised the rest of the apparatus yourself?

A. I did, I bought the chute and the tower, a wooden tower. It was a wooden tower, then the chute, then we stuck our timber out on the tower.

(Objected to as immaterial.)

(Objection overruled.)

(Exception noted for the plaintiff's by direction of the Court.)

By Mr. Jones:

X Q. 33. Was this apparatus you rigged up your own idea, or where did you get the idea from?

A. No, it was my own idea, simply the same as any construction man would do who was on a job, he would see something to be done in order to make the work a little cheaper for the firm he was representing, and went on and did it.

X Q. 34. Did it work satisfactorily?

A. Oh, yes. It did on this particular job, but it never was installed again.

Re-direct examination by Mr. Hood:

R. D. Q. 35. The apparatus you have just been talking about, where you said you had a stick which projected out from the tower, that was a stationary member that could not be swung from side to side?

[fol. 209] A. It was a stationary member.

R. D. Q. 36. Then the chute was suspended from that, only it swung very little from side to side?

A. It just swung to the drift of your line at the guy end of your chute.

R. D. Q. 37. But in order to have a chute deliver at any point straight out from the tower, you had to put a guy line on it, and pull it over and hold it over?

A. Yes, sir.

R. D. Q. 38. In one of your answers I understood you to say that there were certain places, certain kinds of jobs, where the apparatus, such as you have before you in this model, was the only thing that could be practically and successfully used. Is that right?

A. That is correct.

R. D. Q. 39. And by that you mean an apparatus in which the first two sections of the chute were supported by the boom, and the boom could then swing and give freedom of operation and clearance of space adjacent to the tower for placing the concrete?

A. I meant for the first 100 feet the chute was entirely supported by the tower.

R. D. Q. 40. And that would be substantially true even though the lower end of the second chute had to be held in the hands of the operator as he walked around, rather than by a counter-weighted chute such as you have here?

A. Yes, it would.

Mr. Hood: I have another witness who will testify as to the utility and so forth, but, in view of what has been said, Mr. Jones, may we understand that if Mr. Strieffler were called, he would testify that he is a practical construction man, and would substantially corroborate what Mr. Thompson has said?

Mr. Jones: I think the agreement we made heretofore covers the [fol. 210] situation about as far as we care to go.

The Court: Don't that substantially cover it? As I understand it, it comes down to this, that the question of the utility of this invention, if it is a real invention, is not raised. That is what it means to my mind.

Mr. Hood: I do not think I heard that.

The Court: It amounts to this, that the question of the utility of this invention, assuming it to be a real invention, the invention as claimed by you, I mean, is not raised.

Mr. Hood: Except this, that the defendants, even under the admission they have made will say, "Oh, yes, there is some utility, but it is infinitesimal, it is not worth talking about." As a matter of fact, it is worth talking about, and I want the record to show that it is.

The Court: It comes back to this broad proposition; I have had occasion to make several observations upon it several times; it is perfectly idle for an infringing defendant to say the thing which he has taken and is using is of no use. If that were so, why did he take it? That is the answer to the question, ninety-nine times out of a hundred. So that it is a waste of time to show utility with respect to an infringing device.

Mr. Hood: Then, Mr. Strieffler may be excused. It is not necessary to call him.

W. H. INSLEY, sworn.

By agreement of counsel a certified copy of the record and briefs in the case of the Concrete Appliances Company and W. H. Insley against Dietrich Menken, and others, in the United States Circuit [fol. 211] Court of Appeals for the Sixth Circuit, No. 3241, is offered in evidence as a joint exhibit, and marked "Sixth Circuit Record."

By Mr. Hood:

Q. 1. Please state your name, age, occupation, residence, and your relation to this case.

A. W. H. Insley, age 51. Residence, Indianapolis, Indiana. I am an engineer and manufacturer and a party plaintiff.

Q. 2. The record in this case in the joint exhibit which has just been offered shows that you are the exclusive licensee under the patent in suit?

A. Yes.

Q. 3. Does that exclusive license still exist in force?

A. Yes, sir.

The Court: Is he speaking of himself individually or the concern with which he is connected?

Mr. Hood: As an individual. He has a working arrangement.

The Court: He is one of the parties plaintiff?

Mr. Hood: Yes, he is one of the parties plaintiff?

By Mr. Hood:

Q. 4. The Insley Manufacturing Company manufacture chuting appliances under your authorization, do they?

A. They do.

Q. 5. Will you describe briefly the general characteristics of chuting appliances which your company, or you and your company,

manufacture and sell under your license agreement under the patent in this suit?

A. They include a steel tower, a hoist bucket, a hopper, chutes, a boom, substantially as is represented by the structure on the floor.
[fol. 212] Q. 6. How long have you and your company been manufacturing an apparatus of this kind, including a boom and supported chute carried by the tower?

A. About ten years.

Q. 7. About how many such devices have you manufactured and sold during that period?

A. Well, a good many. I should say several thousand. It is difficult to make it more definite than that.

Q. 8. And to what extent are they distributed over the country?

A. They are distributed very widely, not only in the United States but in England, Europe, Canada, Mexico, South America, practically throughout the world.

Q. 9. Can you state approximately the number of such plants that have been sold for use in the city of New York alone and in the vicinity of New York?

A. I think one hundred and fifty within the last two or three years.

Q. 10. And approximately what do these tower apparatus, including the boom and chute and hopper and skip, sell for as an average?

A. Approximately \$3,500.

Q. 11. Have you under your authorization of license from the Concrete Appliances Company made any arrangements with other manufacturers, license arrangements, by which they are empowered to manufacture similar devices?

A. I have licensed two other manufacturers.

Q. 12. Who are they?

A. The Lakewood Engineering Company of Cleveland, Ohio, and the Ransom Machinery Company of Dunellen, New Jersey.

Q. 13. How do these companies stand in the manufacturing world as to size and equipment and ability to manufacture properly efficient apparatus of this kind?
[fol. 213]

A. They are among the leading large manufacturers of equipment of this general character.

Q. 14. Are you and your two licensees able to supply the demand in this country for apparatus of this kind?

A. We are.

Q. 15. At a reasonable price?

A. They are.

Q. 16. And you do supply such apparatus at a reasonable price?

A. We do.

Q. 17. I show you Plaintiffs' Exhibits F, G, and H, and ask you to describe briefly the construction which is illustrated by those photographs, these photographs, Exhibits F, G, and H being photographs, A, B, and C which were attached to the Pierce affidavit in the preliminary injunction matters?

A. These photographs show a plant for distributing concrete by

gravity, including three towers, one of which towers, B, shows a hopper attached to a face of the tower, and the combination boom and chute projecting from the hopper, this being a structure which is so trussed and re-enforced, that it forms the equivalent of a boom, and led from that are other chutes swiveled to it.

Q. 18. What is the part marked 4 on these photographs?

A. The part marked 4 is a member known in the trade as a combination boom chute, that is, a boom and chute built together as one member, instead of separate members as shown by the model on the floor.

Q. 19. How is it connected to the hopper?

A. It is connected to the hopper with a swivel joint.

[fol. 214] Q. 20. That is indicated at the part 7 on the photograph?

A. That is indicated at the part 7 on the photograph, yes, sir.

Q. 21. What is the part 2?

A. Part 2 is a receiving hopper.

Q. 22. And is that hopper vertically adjustable on the tower?

A. The hopper is vertically adjustable.

Q. 23. What is part 6?

A. The part 6 is a line which supports the end of the combination boom chute to the tower.

Q. 24. That is to say, the chute section combination boom chute 4 is entirely supported by the tower?

A. Yes.

Q. 25. Owing to the suspension of the line 6 and the pivotal connection with the hopper?

A. Yes.

Q. 26. Is that combined boom and chute capable of being swung over a horizontal area?

A. It is.

Q. 27. What is the part 5?

A. The part 5 is an additional chute which is pivoted to the first chute section of the combination boom and chute section.

Q. 28. And how is it supported at its end adjacent the combined boom chute section 4?

A. It is supported on the end of the chute.

Q. 29. So that the part of the weight of that second chute section 5 is supported from the tower through the medium of the first chute section and line 6?

A. Yes, sir.

Q. 30. Is the combined chute and boom section 4 capable of being adjusted vertically during the progress of the work?

A. Yes.

[fol. 215] Q. 31. I call your attention now to Plaintiffs' Exhibits I, J, K, L and M, which are respectively photographs A, B, C, E and F, which accompanied the defendants' affidavit by Prettyman in the preliminary injunction matters. Is the apparatus shown in and substantially identical with the second chutes section in the previous exhibits F, G, and H?

A. Yes.

Q. 32. What difference do you notice in these last photographs?

A. The difference is that there has been added to this plant a boom from the tower out to the end of the chute which is to support the end of the chute.

Q. 33. By that do you mean the stick which is at the lower end connected with the tower and is inclined upwardly and outwardly and connected to the outer end of the element you have called the trussed boom chute?

A. Yes, sir.

Q. 34. And how is that stick connected with the tower?

A. It is connected with the tower by a hinge which will permit it to swing horizontally.

Q. 35. Do these photographs show that the hopper and the combined boom chute and the added boom or upwardly inclined brace have been raised from time to time as the building progressed?

A. They do.

Q. 36. How does the second chute section in these exhibits, I, J, K, L and M compare with the second chute section in Exhibits F, G and H?

A. In the later exhibits the second chute section is counter-weighted, and in the first it is simply a chute which can be supported on the outer end by men.

Q. 37. In other words, the apparatus as shown in Exhibits F, G, [fol. 216] and H has been modified by removing the second chute section and substituting a chute section which is counter-weighted and substantially identical with the second chute section in the model before you?

A. Yes, sir.

Q. 38. Who originated the counter-weighted second chute section?

A. I did.

Q. 39. Have other manufacturers generally respected your individuality in this respect?

A. There is no patent on the counter-weighted chute section.

Q. 40. But is this construction generally copied by others?

A. Yes, very recently it has been copied.

(Defendant admitted notice of the patent prior to the filing of the bill of complaint under section 4900.)

Cross-examination by Mr. Jones:

X Q. 41. About what is the percentage of profit on this \$3,500 apparatus which you sell?

(Objected to.)

(Question withdrawn.)

X Q. 42. Before you became licensee of the Concrete Appliances Company you manufactured and sold an apparatus, did you not, comprising the five elements of the patent in suit, the tower, the hoist, the hopper, the boom and the chute, in disregard of this Callahan patent in suit?

(Objected to as not cross-examination.)

(Objection overruled.)

(Exception noted for the plaintiffs, by direction of the Court.)

A. I did.

[fol. 217] By Mr. Jones:

X Q. 43. Did you not make statements to various parties in the trade from time to time that this Callahan patent was no good, so to speak, and invalid?

A. In my judgment.

X Q. 44. There was a suit brought on this patent in the Vancouver, B. C., Court, Canada, in 1913, was there not, in which your apparatus was charged as an infringement and you defended the suit?

(Objected to as not proper cross-examination.)

The Court: Before he became practically the owner of this patent, we will assume that he thought it was no validity, and he did what, if it was valid, would be an infringement. An action of that kind was brought against someone so nearly connected with him that he was called upon to defend, and he did defend. Of what help to us is it to have that gone into at all?

Mr. Jones: I am leading up to the fact that in the defense of the Canadian suit Mr. Insley had depositions taken in St. Louis by Mr. Schley, Mr. Hood's partner, calling a half dozen witnesses, who testified about certain very serious prior uses. Later, when Mr. Insley became licensee, having control of the litigation, he brought suit in Cincinnati in a case which went to the Court of Appeals, and in which these prior defenses were not in the record at all, the defendant apparently not knowing about them, Mr. Insley through his attorneys urging that the patent should be sustained as a broad pioneer patent, over very meagre defenses, consisting simply of copies of certain patents, the practical art as developed in St. Louis being entirely omitted. Mr. Insley now asks this Court to give full weight to this Cincinnati Court of Appeals decision, [fol. 218] which we are prepared to show was based on what was a very meagre and incomplete defense.

The Court: We are practically taking depositions, so that I will admit anything which counsel think would be of materiality and substantial value, subject to the objection. Evidentiary questions will be ruled on along with the other questions which may arise in the cause, and with leave now granted to the plaintiffs to move to strike out. I will go further, and let the record show that the motion has been made, and I will dispose of the motion to strike out, and allow an exception to either side, according as the final ruling may be. I will take it subject to the objection, and consider the value of the objection along with any other questions that arise.

By Mr. Jones:

X Q. 45. To make the question short, is not the statement that I just made to the Court substantially correct with reference to the Canadian and St. Louis litigation?

A. I don't know, your Honor, whether I want to answer that.

By the Court:

X Q. 46. The question is substantially this: You were a party to the Cincinnati litigation?

X Q. 47. And was not that litigation conducted without a disclosure by you of the prior uses which had been made a feature of the Vancouver litigation?

Mr. Hood: Your Honor, he was the plaintiff in that case. That was not up to him. He was the plaintiff in the Cincinnati case.

The Court: It is not a question of whether it was up to him or not. The question is, did he or did he not make a disclosure of it?

The Witness: No, not to my knowledge.

[fol. 219] By Mr. Jones:

X Q. 48. And the Cincinnati case, of course, was much later than the Canadian case?

A. Yes, sir.

X Q. 49. You have let it be known quite generally, have you not, that under this Cincinnati decision you have a broad monopoly on practically all apparatus for distributing concrete from a tower through chutes?

A. Only with a boom.

By the Court:

X Q. 50. Do you mean by that broadly the boom feature, or merely the chute supporting function of the boom feature?

A. I mean by that that we have not claimed a monopoly on the plant distributing concrete by gravity excepting in so far as the chute is used suspended by a boom or combined with the boom.

By Mr. Jones:

X Q. 51. However, you have advertised rather widely the Cincinnati decision, have you not?

A. We probably have, yes.

X Q. 52. And until we filed our interrogatory in this case asking whether the chutes hung from an inclined cable, as distinguished from a boom, were an infringement, you were quite willing to have the public believe that even this type was an infringement, were you not?

Mr. Hood: It seems to me we are encumbering the record with an expression of opinion. It does not make a particle of difference

what this witness may have thought his patent covered, or what he may have claimed it covered.

The Court: That will not do. This is a proceeding in equity, in which he is asking for the extension of the grace of the Chancellor. [fol. 220] This line of interrogation is based upon the clean hand doctrine of the Courts of Chancery.

Mr. Hood: I have no serious objection to it at all. It is all right, if the Court wants to have the information, but it does seem to me that there is more padding of the record than there is any necessity for.

The Court: I will not restrain counsel. He may develop all the circumstances he thinks proper.

Mr. Jones: I will try to make it as brief as possible, but there is quite a direct connection, I think, between the two cases.

By Mr. Jones:

X Q. 53. Do you understand the question?

A. Read the question again.

(Question No. 52 repeated.)

A. May I answer that by an explanation, your Honor?

By the Court:

X Q. 54. You had better answer the question, then explain. That is the usual way.

A. Yes.

X Q. 55. You either did or you did not. Answer the question, yes or no; then explain.

A. My answer is "Yes" and my explanation is that up to the time of the Cincinnati suit we did have patents which covered substantially the distribution of concrete by gravity through chutes, by any character of chutes, and after the Cincinnati decision the question never came up definitely for a decision as between us and any possible competitor until you brought the question up in relation to this case.

By Mr. Jones:

X Q. 56. You refer to the Arthur L. Smith patent, in which patent priority of invention was conceded by Callahan in an interference proceeding, do you?

[fol. 221] A. I refer to the Arthur L. Smith patent, yes.

X Q. 57. And you advertised this apparatus very extensively, did you not?

A. Yes, sir.

X Q. 58. And spent a great deal of money on your advertisements?

A. Yes, sir.

X Q. 59. Have your advertisements since the Cincinnati decision endeavored to differentiate between chutes supported by a boom and chutes supported in any other way?

A. We endeavored to sell a number of chutes supported by a boom. We do not advertise any other chute.

X Q. 60. In your notices to other possible infringers after the Cincinnati suit, did you attempt to point out that your monopoly was limited to a boom support as distinguished from the broader monopoly you previously thought you had?

A. We never gave any notice to any infringers except where the boom plant is used.

X Q. 61. Do you know about how many suits have been based on this Callahan patent?

A. This is only the third one that has come to trial that I know of.

X Q. 62. I mean, how many suits were started, roughly?

A. Two others, I think, besides, as nearly as I recall now.

X Q. 63. Mr. Hood mentioned in one of our St. Louis depositions a considerable number of other suits. You are not familiar with the one in Western Pennsylvania, the one in St. Louis, the one in Los Angeles, and one in Cincinnati, and one in Chicago?

Mr. Hood: I did not mention any in Los Angeles.

[fol. 222] A. These cases to which you call attention, the infringement immediately ceased upon notice of filing the suit. There was no further infringement.

By Mr. Jones:

X Q. 64. So that the Cincinnati case is the only one which actually went to trial in the United States?

A. That is right.

By the Court:

X Q. 65. You had better clear that statement upon the record. A moment ago you spoke of this being the third case which had come to trial.

A. I had reference to the Vancouver case under which the same patents were involved.

X Q. 66. I supposed you had. I did not think it was clear without that statement.

A. Yes.

By Mr. Jones:

X Q. 67. The defendants in each of those other cases were small contractors, were they not?

A. No. That is not the case. The defendant in the suit that was instigated at Chicago was a very large contractor, who endeavored to get behind him the whole Contractors' Association of Chicago and St. Louis.

X Q. 68. And as a result of that activity you did not press that suit but allowed it to be dismissed after four years of inaction. Is that true?

A. Approximately.

X Q. 69. With reference to this Philadelphia apparatus shown in the photographs, and alleged to be an infringement, you have referred to the part 4 of Exhibit H, as a combination boom and chute. As a matter of fact, that is nothing but a chute trussed with a light frame of wires to stiffen it, is it not?

[fol. 223] A. That is substantially a boom which incorporates a chute.

X Q. 70. In the photographs taken a little later of this apparatus, in which an inclined prop or so-called boom has been incorporated, is there any other boom in that photograph, other than the heavy inclined boom which supports the outer end of that chute?

A. There is. That is the member marked 4 on Exhibit H, which is substantially a boom.

X Q. 71. However, in none of these Philadelphia photographs is there shown a boom as an element separate and distinct from the chute itself, is there, except the photographs which show the later added wooden prop?

A. No.

X Q. 72. And if that trussed chute were made a little stiffer, or of heavier metal, there is no reason why those wire braces might not be dispensed with, is there, and in fact chutes have been used in a similar manner without such re-enforcement, have they not?

A. Not where they are supported from the tower. That trussing is absolutely necessary.

X Q. 73. However, the only purpose of it is to stiffen or strengthen the chute, is it not?

A. So that it can perform the function of a boom.

X Q. 74. Aside from the boom, will you kindly answer the question. The only purpose of it is to stiffen or strengthen the chute, is it not?

A. No, it is not. The purpose of it is to give that member the character of a boom.

X Q. 75. Do you wish the Court to understand that you deny that that frame and wire arrangement stiffens the chute and strengthens it?

A. Yes, sir, as a chute. That wire and struts are not necessary to stiffen the chute as a chute. The chute does not need that stiffening as a chute.

[fol. 224] X Q. 75. Regardless of whether it needs it, the strengthening effect is there, is it not?

A. The strengthening effect is there, yes.

X Q. 76. On these photographs showing the inclined prop, the counter-weighted chute hung from the end of said props considerably heavier, is it not, than the prior chute 5?

A. Yes.

X Q. 77. This prior chute 5 in the earlier photograph, Exhibit H, is supported in part on a trestle on the floor?

A. Yes.

X Q. 78. And the third section, 5A, is entirely supported by trestles on the floor?

A. Yes.

X Q. 79. So that it will have to be moved about by workmen, lifting it up and carrying it around?

A. Yes.

X Q. 80. Is this one of your advertisements in the American Builder, November, 1920?

A. Yes, sir.

X Q. 81. Do you consider that that vertical post or the mast is a tower?

Mr. Hood: That is objected to. It seems to me the examination of this witness about other structures he manufactures, which are radically different in appearance, and so forth, is wholly immaterial, whether he thinks they are within this patent or not. Why should this case be burdened with testimony of that kind? It cannot possibly affect any question involved in this case. It happens that the particular structure that is now being asked about is involved in another subsequent patent, but it has no bearing on this case at all.

The Court: If you can always be sure that you can correctly forecast the purpose of a cross examination of counsel you can safely [fol. 225] rule upon it, but sometimes if cross-examining counsel discloses the theory of his cross-examination, there is not much use for cross-examination. I do not like to control a cross-examination. I put it up to counsel to keep within the limits of materiality, both legally and practically.

(Question repeated.)

A. No.

By Mr. Jones.

X Q. 82. Do you recall writing a letter to W. L. McDonald and Company, November 27th, 1918, in which you state that a device which he has submitted to you has some fundamental disadvantages, and that, therefore, you would not consider it advantageous for you to take it up and put it on the market, as shown in what purports to be a copy, which I show you?

A. I do not recall that letter.

X Q. 83. Please look also at the print of a patent application which is said to have accompanied the letter, illustrating the apparatus, consisting of a mast with a hopper and chute suspended from a boom.

A. I do not recall it.

X Q. 84. The photographs of the alleged infringing Philadelphia apparatus illustrated three distinct types of chute suspension, do they not, the line suspension crossing the railroad tracks, the block and tackle connection from the top of the tower to the outer end of the first section of the chute, and a similar arrangement, with the addition of an inclined prop or boom to help support the weight of the additional counter-weighted section, do they not?

A. Yes, sir.

X Q. 85. Is it a fact that the concrete used today is very much more wet or "sloppy" than it was ten or fifteen years ago?

A. It is according to the plant it is used in. It is owing to the [fol. 226] method of distribution. That is not a question that can be answered directly.

X Q. 86. That mush concrete is much better adapted to slide through pipes and chutes than dry concrete?

A. Yes, sir.

X Q. 87. In fact, dry concrete discharged through a pipe will frequently clog the pipe, will it not?

A. Yes.

X Q. 88. Unless the pipe is very large indeed?

A. Yes, sir.

X Q. 89. And it will also clog the chutes?

A. Yes, sir.

X Q. 90. Are you familiar with the standard apparatus of the Ransome Concrete Company?

A. Yes.

X Q. 91. It consists of an apparatus very similar to this model in that it comprised a tower, a hoist, a hopper and a gate permitting the concrete to be discharged into wheelbarrows?

A. Yes, sir.

X Q. 92. That apparatus was used very extensively as early as 1906, was it not?

A. Yes.

X Q. 93. There has been a great deal of discussion in the engineering magazines in the last ten or fifteen years, has there not, with reference to the relative merits of dry and wet concrete?

A. Yes.

X Q. 94. At first many architects and engineers were much opposed to the increased use of water, were they not, on the theory that the concrete was not as strong as it would otherwise have been?

A. Yes.

X Q. 95. And there has been a gradual change over a period of [fol. 227] years in this prevailing belief until now wet concrete is used very extensively and is practically essential in re-enforced concrete buildings, is it not?

A. Yes.

X Q. 96. And there are even a few architects today and others, such as the United States Government officials, who object to wet concrete, is that not true?

A. No, that is not true, as you state it. There are a few government officials that object to it, but as a rule the government officials do not object to it.

X Q. 97. My point was, there are still a few people who have not been converted?

A. There are still a few, yes.

Redirect examination by Mr. Hood:

R. D. Q. 98. You were asked about a certain suit that was brought against a Chicago manufacturer. The inference left was that you discontinued that suit because you were afraid to continue it. What

were the facts about your discontinuance of that suit? Did the manufacturer in that suit continue his infringement?

A. It was a contractor. He did not continue his infringement, but acknowledged that he did not wish to fight the matter out.

R. D. Q. 99. And you understood that he discontinued the infringement?

A. Yes, sir.

R. D. Q. 100. And in the Cincinnati case, who actually defended that suit, the contractor, who was one of the parties, or the manufacturer of the apparatus?

A. The manufacturer actually defended the suit.

R. D. Q. 101. And after the suit was completed did he account to you for his past infringement?

A. Yes.

[fol. 228] R. D. Q. 102. And discontinued further infringement?

A. Yes.

R. D. Q. 103. And he became associated with one of your licensees, did he not?

A. Yes, sir.

Recross-examination by Mr. Jones:

R. X Q. 104. Who is this Chicago contractor? Is that the Witherspoon-Engler Company?

A. Yes, sir.

R. X Q. 105. Do you mean to say that they discontinued using the apparatus before they finished the building, or that they finished their work and then discontinued?

A. I do not recall that detail.

R. X Q. 106. And that grain elevator afterwards exploded, did it not, and is now being rebuilt by the same contractor?

A. I do not know.

R. X Q. 107. How are you, then, in a position to state that the Witherspoon-Engler Company discontinued using the apparatus when, as a matter of fact, they were prepared to fight the suit vigorously, as I believe you practically admitted?

The Court: I understood him to say they took out a license.

Mr. Jones: No, this is something else. He was talking about Cincinnati. We are talking about Chicago.

By Mr. Jones:

R. X Q. 108. In other words, you really do not know anything about the circumstances of such alleged discontinuance, do you?

A. I know that any further equipment that this contractor used [fol. 229] he bought from a licensed manufacturer.

R. X Q. 109. But on that particular building, you have no information that justifies you in leading the Court to infer that they ceased using the apparatus because of that suit, do you?

The Court: He said that suit was discontinued.

Mr. Jones: The suit dragged for four years. As a matter of fact, they did not discontinue it.

The Court: It was then dismissed, and the suit discontinued.

Mr. Jones: The building was finished long ago.

The Court: It was his understanding that the party would not further infringe, and as far as he knows, since that time they have not further infringed, because they have bought their apparatus from a licensee since. Is that true?

The Witness: Yes, sir.

Mr. Jones: But in that particular suit, where I was the attorney, they did not discontinue the apparatus until they got through with it. Of course, they did not have to use it very long. It does not take very long to pour concrete.

(At 12.30 P. M. a recess was taken until 1.30 P. M.)

1.30 p. m.

Present: Parties as before noted.

Mr. Hood: Your Honor, in closing our *prima facie*, we offer this stipulation which is as follows:

It is hereby stipulated and agreed by and between the counsel for the respective parties hereto, for the purposes of this case only, that [fol. 230] plaintiff, Concrete Appliances Company, is the sole owner of Letters Patent No. 948,719, as alleged in the bill of complaint.

This stipulation contained the further provision that regular printed copies, uncertified, of United States and foreign patents may be offered and received in evidence by either party.

There is a further stipulation, also, that as to foreign patents photostat copies obtained from the United States Patent Office may be used instead of printed copies; that foreign copies shall be effective as of the date of issue, which in the case of British patents is considered as the date of acceptance, and that United States patents shall be considered as evidence of knowledge by others as of the date appearing upon the face of the printed copy, indicating the filing date of the application.

(Plaintiffs rest.)

(Defendants outline contents of their printed depositions.)

(Adjourned until Tuesday, October 4, 1921, at 10 A. M.)

[fol. 1]

IN UNITED STATES DISTRICT COURT

[Title omitted]

Depositions de bene esse taken on behalf of defendants in the above-entitled cause, before Annie C. Courtenay, notary public, pursuant to attached notice, at the offices of Messrs. Sheridan, Jones, Sheridan & Smith, suit 1532-36 Marquette building, 140 South Dearborn street, Chicago, Illinois, commencing at 10 a. m. Monday, December 20, 1920.

Present: Arthur M. Hood, Esq., of Hood & Schley, Indianapolis, Indiana, for plaintiffs; and George Bayard Jones, Esq., of Sheridan, Jones, Sheridan & Smith, Chicago, Illinois, for defendants.

FOUNT M. WOODWARD, a witness produced, sworn, and examined on behalf of defendants, deposes and testifies as follows in answer to interrogatories by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Fount M. Woodward; 42 years; 306 N. Vernon Avenue, Brookfield Illinois. I am superintendent for McNulty Bros. Company.

[fol. 2] Q. 2. Are you familiar with any instances of the use of chutes or pipes for distributing concrete? If so, state the circumstances.

A. In the year of 1907 they used sheet metal pipes, wood hopper for the distribution of concrete on the American Hotel and Theatre Building at the northeast corner of Seventh and Market Streets, St. Louis, Mo.

Q. 3. What was your business at that time?

A. I was superintendent of the Roebling Construction Company.

Q. 4. How did you happen to be familiar with this work you speak of?

A. The company I was with used the concrete fireproofing, and also furring and lathing; and it was my duty to employ concrete foremen and do the work as cheaply as possible; and I was interested in any new machinery, methods or scheme of doing concrete fireproofing.

Q. 5. Did you personally see the apparatus you have referred to?

A. Yes, sir. The company I was with made a bid on the fire-proof floors, column and girder covering, but was not the successful bidder. The work was within four blocks of our office, and in watching the progress of the building I noticed a new method and went in to investigate. At that time they were distributing concrete on the mezzanine floor of the hotel section. After this concrete work had been let the company I was with secured the contract for the furring and lathing of this American Hotel and Theatre Building. It is customary, and also essential, to place hangers in the concrete floor slabs to support the construction of suspended ceilings, false beams, cornices, &c. I visited this job as the different floors were installed, showing the men where and how to place the hangers, up to the time the roof of the theatre was concreted.

[fol. 3] Q. 6. About how often and over how long a period did your visits to this building continue?

A. At first I visited the building at intervals of from ten days to two weeks, until we started the furring and lathing, and then I visited the building almost daily. I visited the building from the summer of 1907 till Thanksgiving of 1908.

Q. 8. About when would you say the use of pipes for distributing concrete on this building began?

A. The spring of 1907. They continued in use until the first of January, 1908.

Q. 9. How many of the floors were poured in this manner?

A. All the floors up to the fourth floor were poured in this manner. This was the level of the theatre roof.

Q. 10. Please describe more fully the apparatus used in distributing the concrete, beginning with the mixer.

A. They had a batch mixer, and a platform built around this mixture, and the aggregate, that is, the stone and sand was brought up through a hopper that fed this mixture. They operated a self-dumping concrete bucket, which was raised through a hoisting tower, of wood construction, situated on the end of the building on the Seventh St. side. This self-dumping bucket dumped the concrete into a hopper several floors or several feet higher than the place from which the concrete was to be distributed. They were round sheet metal chutes, connected with this receiving hopper, and down through the skeleton framework, and at different angles or incline from the concrete passed through these chutes, which were supported by pieces of wood made in X-shape and by wire hangers from the structural members of the steel framing.

Q. 11. About how far would the concrete flow through the chutes?

[fol. 4] A. Different days I would see the chutes different lengths. When they poured the mezzanine floor of the hotel portion the concrete was carried through the chutes a distance of sixty feet, that is, from the time it left the self-dumping bucket.

Q. 12. State what parts of the chutes were supported by wire hangers and what parts by the wooden supports.

A. It seemed that the wire hangers were used where they had a beam or girder to put the wire over.

Q. 13. How was the lowermost section of the pipe usually supported?

A. By a wooden brace made in the shape of an X, and right at the mouth of the chute it had what is commonly called a horse, that is a piece of wood with four legs which stands alone.

Q. 14. If they wished to deposit the concrete in a different place, what would they do?

A. Change their chutes. They put on a short chute, or took off a length of the chute they were using.

Q. 15. Were they able to change the angle in any way?

By Mr. Hood: Objected to as leading.

A. Yes, they changed the angle to any direction, except upwards.

Q. 16. What kind of connection was provided between the successive lengths of pipe?

By Mr. Hood: Objected to as assuming and leading.

A. I don't really remember enough to go into detail about it.

Q. 17. Do you remember whether they were able to change the angle between adjoining sections?

By Mr. Hood: Objected to as assuming.

A. No.

Q. 18. You referred to concrete passing through chutes a distance [fol. 5] of sixty feet. In a case like this, would the chute be a single chute 60 feet long, or how would it be constructed?

A. As I remember the construction of the chutes, they were the length of possibly eight or ten feet, with some kind of a band or wrought-iron collar at the connecting end.

Q. 19. You have previously referred to your interest in new methods or schemes in connection with this American Theater Building. Explain what struck you as new in this connection.

A. The saving of labor; in fact, the whole operation was new from the old practice of a wheelbarrow hoist.

Q. 20. Did others show any interest in this new method?

A. Yes, sir. I had taken it up with the manager of the company for which I worked and on his next visit to St. Louis he visited the job.

Q. 21. Who was this?

A. Mr. Andrew W. Woodman. At that time he was manager of the Roebling Construction Company, of what was known as the Chicago office, and lived at Evanston, Illinois.

Q. 22. Was this building of interest to people generally?

A. I don't understand your question; naturally it would be, from different standpoints.

Q. 23. Please explain more fully why it would naturally be of interest, from the standpoint of a building constructor.

A. Up to this time the engineering profession, as a rule, objected to using concrete, as we termed "sloppy concrete." There were some interested—myself included—on seeing the condition of the work after the concrete had been placed by this method.

[fol. 6] Q. 24. Were there visitors to the job besides Mr. Woodman?

A. Yes, I had an engineer from the Westlake Construction Company's office, by the name of Woodyard, who was very much interested in concrete construction, and visited the job with me several times.

Q. 25. State, generally, whether you saw any other visitors on the job.

A. Yes, I saw quite a number of different contractors, and foremen, on the job at different times.

Q. 26. You have stated that the concrete hopper was higher than the place where the concrete was being distributed. As the concrete work on the building got higher, what was done with the hopper?

A. It was placed at a higher level.

Q. 27. What was done with the pipes or chutes?

A. They were taken up and used the same as they were below.

Q. 28. Of what were the floors made?

A. I don't understand your question.

Q. 29. I understand that this was a steel skeleton building from your previous answers, and that a number of floors were provided, as the building was at least several stories high. Of what material was these floors made?

A. Reinforced concrete slab.

Q. 30. How much of each floor area was formed by discharging concrete through the chutes to which you have referred?

A. Practically the entire floor area, with exception of where the hoist went up through the building.

Q. 31. I show you what purports to be a photograph of a page of the St. Louis Republic of Sunday, February 16, 1908, headed, "New American Theater Opening Tomorrow, Is Model of Handsome and Safe Playhouse Construction." Can you identify this full page article and the illustrations as the building to which you [fol. 7] have been referring?

A. I can identify the photograph of the American Theater Building, St. Louis.

Q. 32. Please read the paragraph entitled "Novel Feature," and explain a little more fully what is referred to therein.

A. I think the article explains itself.

Q. 33. That is, it refers to the concrete-distributing chutes which you have been testifying about; is that it?

By Mr. Hood: Objected to as leading.

A. Yes, sir. There is one thing wrong in that article which is not so, that is, it states the floor slab was reinforced by inch and a quarter bars.

Q. 34. As I understand your testimony thus far, the concrete was discharged from a mixer into a self-dumping bucket, which was raised through a hoisting tower to a point higher than where it was required, and was then dumped automatically from the bucket into a hopper, from which it flowed through a series of downwardly-inclined pipes to its final position, and that the hopper was raised from time to time as the building became higher, the pipes also being raised so that the upper end would receive concrete from the hopper in any of its different positions, and the lower end would discharge the concrete to any part of the floor area. Is this understanding correct?

A. Yes, sir.

Q. 35. Who was reputed to be the originator, inventor or the party otherwise responsible for the use of this apparatus for distributing the concrete?

A. The day that I first visited the job, I met a superintendent of the Gilsonite Construction Company, a man that I had known by the name of Bankes. I asked him, "Bankes, whose idea is this?" and he said it was his own. I said, "How long have you had it, [fol. 8] Bankes?" He said, "I have had it quite a while, but you

know how hard it is for us fellows to tell people in the office anything."

By Mr. Hood: The reported conversation with Mr. Bankes is objected to as incompetent.

Q. 36. Did you discuss with anyone else the question of the novelty of this apparatus?

A. Yes, I talked it over with the engineer for Roebling, and I went to see the Gilsonite Construction Company, and asked them if it had been patented.

Q. 37. What did you learn?

A. They told me "no," it hadn't been.

Q. 38. Was there any further discussion?

A. Yes, this man I was talking to seemed to think that the idea was as old as the hills—he didn't see where there would be any grounds for application for patent.

By Mr. Hood: The report of alleged thoughts of an unnamed person are objected to as incompetent.

Q. 39. In your last answer, were you referring to the Roebling engineer, or someone connected with the Gilsonite Construction Company?

A. It was the estimator for the Gilsonite Construction Company.

By Mr. Hood: Last objection repeated.

Q. 40. By whom was Bankes employed, if you remember?

A. By the Gilsonite Construction Company, on the American Hotel & Theater Building.

Q. 41. Do you know whether Bankes tried this apparatus prior to the time it was used on the American Hotel & Theater Building?

A. I do not.

Q. 42. Do you know whether he proposed using it earlier?

[fol. 9] A. I do not.

Q. 43. I show you a photograph having two views marked "A" and "B," and ask if you can tell what structure is shown therein?

A. No, I cannot.

By Mr. Jones: The Notary is requested to mark the photograph of the St. Louis Republic, in order to identify it later, as "Defendant's Exhibit 1, Photograph of St. Louis Republic;" and to mark the photograph just referred to as "Defendant's Exhibit 2, Photograph A-B of Canadian Suit."

Mr. Hood is reminded that the photograph of the St. Louis Republic was filed in opposition to the motion for preliminary injunction in August, 1920, accompanied by the affidavit of a librarian, Clarence E. Miller, St. Louis, and is asked if he wishes to stipulate that this photograph is a reproduction of the paper in question, published February 16, 1908.

By Mr. Hood: It is stipulated by counsel for plaintiffs that if Clarence E. Miller were called and examined as a witness for defendants he would testify that he is a resident of St. Louis, Mo.; a

librarian connected with the Mercantile Library of that city, and familiar with its files since October 1, 1900; that on or about February 16, 1908, a copy of the St. Louis Republic was placed in the files of said Library; and that the photographic copy offered in this case as "Defendants' Exhibit 1" is a true and correct copy of one page of said issue of the St. Louis Republic of February 16, 1908. Plaintiffs' counsel does not object to the secondary character of the exhibit.

Q. 44. Do you recall anything about the construction of the St. Louis Coliseum?

A. Yes, sir. It was constructed at the southwest corner of Jefferson [fol. 10] and Washington Sts., by the C. L. Gray Construction Company, in the year 1908. It was a fire-proof balcony, a semi-steel structure with concrete floors.

Q. 45. How was the concrete distributed?

A. They built a high concrete tower, which was braced with cables used as guy lines. The concrete was hoisted in concrete buckets, which were emptied into a hopper and distributed through chutes.

Q. 46. I show you four pages from a catalogue of the Gray Construction Company, filed in opposition to the preliminary injunction motion, and will ask if you can identify any of the structures illustrated therein.

A. That is the Coliseum, St. Louis.

By Mr. Jones: The Notary is requested to mark these two sheets (4 pages) "Defendants' Exhibit 3, Cuts of St. Louis and Des Moines Coliseums."

Q. 46a. Did you personally see the Coliseum while it was being erected?

A. Yes, sir.

Q. 47. Did you visit the roof of the American Theatre Building when it was nearly completed, as far as the concrete floor slabs were concerned?

A. No, sir.

Q. 48. Did you see the Coliseum more than once while it was being erected?

A. I saw the Coliseum several times—I saw the concrete operation, the concreting of the balcony; and I saw the job after the concreting was completed.

Q. 49. Were any wheel-barrows or carts used in distributing the concrete to the different floors of the American Theater Building?

By Mr. Hood: Objected to as incompetent.

A. Not to my knowledge.

[fol. 11] Q. 50. Prior to the use of the sloppy or wet concrete used in building the American Theater Building, what kind of concrete was generally employed?

A. Most engineers and architects specified the different mixes. The Roebling Construction Company, for which I worked, advocated

using concrete with only enough water added that when the floor slab had to be tamped, the water would rise to the top of the slab.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 51. How do you fix the time as the spring of 1907 when you first saw the apparatus which you have described in use in the construction of the American Hotel & Theater Building?

A. The Roebling Construction Company had their office in the Victoria Building, St. Louis, Mo., until January 1, 1908. I estimated the furring and lathing, and we completed our work in the theater portion of the American Hotel & Theater Building while our office was located in the Victoria Building.

X Q. 52. How do you fix the time as the spring, instead of the summer or fall?

A. Our work of the furring and lathing took sixty days to complete, and we were completed in the theater portion the early part of December, 1907. It takes the work of setting steel and concreting up to the five floors which covered the theater portion, in my judgment, took ninety days or more, which is my basis for placing the time as the spring of 1907.

X Q. 53. From July 1, 1907, to December 1, 1907, would give a period of ninety days for erection of frame and placing of concrete, and a subsequent sixty-day period for placing furring and lathing, would it not?

A. It would.

[fol. 12] X Q. 54. Then it is your recollection that the work of erection of the frame of the American Theater Building began about July 1, 1907, isn't it?

A. No, sir. My recollection is that it began in the spring.

By Mr. Jones: It is our intention to establish the dates later by records from the architect's office.

X Q. 55. You are depending on your memory for fixing these dates, are you?

A. Not altogether. I have an old time-book with the time of our lathers on the American Hotel & Theater Building, which was Roebling's contract L-390. In that book the time of the men, starting in 1908, refreshes my memory, as the two men working at that time were men working in the hotel portion.

X Q. 56. You don't remember distinctly the details of construction of the apparatus which you used for placing the concrete in the American Theater & Hotel Building, do you?

A. No, sir.

X Q. 57. Nor do you remember the details of construction of the apparatus which you say was used in placing the concrete in the St. Louis Coliseum, do you?

A. No, sir.

Deposition closed.

Fount M. Woodward.

ANDREW W. WOODMAN, another witness produced, sworn, and examined on behalf of defendants, deposes and testifies as follows in answer to interrogatories by Mr. Jones:

Q. 1. Please state your name, age, residence, and occupation.

A. Andrew W. Woodman; fifty-four years; Evanston, Illinois. I am a civil engineer.

[fol. 13] Q. 2. What experience have you had in the design or erection of buildings?

A. I have been a builder of structural steel, of fireproofing and reinforced concrete, and also of complete buildings from 1899 to 1909. I was district manager of the Roebling Construction Company, whose business was fire-proof building construction. From 1909 to 1914 I was a contracting engineer, building industrial and power plants of brick, steel, and reinforced concrete. From 1914 to 1920 I was a builder of bridges in structural steel, the bridge work including reinforced concrete bridges as well as steel bridges.

Q. 3. Are you familiar with the methods used in the construction of the American Theater & Hotel Building in St. Louis, with particular reference to the concrete work?

A. In a general way, yes. As I recall, some time during 1907, at which time I was the western manager of the Roebling Construction Company, making a specialty of concrete fire-proof building construction. I had an office in the City of St. Louis, and made periodical visits to that city. On one of my visits, during the open building season of 1907, as I recall the date, on visiting the office at St. Louis, my attention was called by our local superintendent, Mr. Fount Woodward, to a novel system of distributing the concrete which was being placed in the reinforced concrete floors of a building in the heart of the business district of St. Louis, this building being known as the American Theater, as I recall the name. I visited this building with Mr. Woodward, and examined the equipment which was being used for distributing the concrete, and observed that this equipment consisted, in general, of the following: a concrete mixer placed in the basement, delivering concrete in a comparatively wet form to a skip hoist, which, in turn, carried the concrete, by [fol. 14] way of an elevator extending to a point above the top of the building, to a receiving hopper at or near the top, there dumping the concrete into a system of closed pipes made of sections, these sections being hung and supported to the structure, the concrete being delivered at the lower end of the last section of pipe to the floor where concreting operations were being carried on.

Q. 4. Was the concrete deposited into wheel-barrows, carts, or forms?

A. The concrete was delivered directly to the wood forms without the intervention of wheel-barrows.

Q. 5. Will you kindly make a rough pencil sketch illustrating the apparatus you have described?

A. I hand you this sketch as indicating in a general way my recollection of the arrangement of the concrete distributing equipment in this building.

By Mr. Jones: The notary is asked to mark this sketch "Defendants' Exhibit 4, Woodman Sketch of American Theater Building."

Q. 6. Please state how the pipes were hung from the steel structure.

A. As near as I can recall, the pipes were hung to the steel frame by means of wires or light cables, and the last section of pipe, through which the concrete was delivered directly to the wood forms, was connected to the preceding section by means of a flexible joint, and the lower end of this section rested upon a wooden horse.

Q. 7. About how far did the concrete flow through these pipes?

A. At the time I visited the building the concrete was passing through this series of pipes for a distance of perhaps sixty to a hundred feet. It is my recollection when I visited this building [fol. 15] with Mr. Woodward that concrete was being placed through this system of pipes on the fourth or fifth floor, and that the top of the tower elevator was located at a point above the eighth, ninth, or tenth floor, so that the journey of the concrete from the time it was dumped from the skip carried the concrete through four or five stories in the height of the building.

Q. 8. Have you seen any photographs or descriptions of this building in the last ten or twelve years from which to refresh your recollection, or are you testifying from your recollection of what you saw about thirteen years ago?

A. I am testifying from recollection, and, if my recollection is correct, at the time of this visit I requested Mr. Woodward to endeavor to take some photographs of the equipment; and, if I recollect correctly, Mr. Woodward did get one or more photographs which were used at the time as a basis for discussion of this particular method of concrete distribution by the General Manager of the Roebling Construction Company and myself. If such photographs were obtained, as I think they were, these photographs would have automatically passed out of my possession in October, 1909 at which time I severed my connection with the Roebling Construction Company.

Q. 9. About how long were the sections of pipe?

A. I would say about six or eight feet.

Q. 10. About what diameter?

A. I would say about eight inches.

Q. 11. When it became necessary to change the point at which the concrete was being distributed, what was done?

A. During the time that I was visiting the building, it is my recollection that the distributing end of the chute was not moved.

Q. 12. From your observation as an engineer, what would you say [fol. 16] as to the manner in which they were moved when such movement became necessary?

A. It being my recollection that the delivery section of the chute being connected to the adjoining section by means of a flexible joint, the process of changing the point of delivery would consist of first moving the supporting horse to the point where delivery was desired, and then swinging the delivery sections of the pipe about the flexible joint at its upper end as a pivot.

Q. 13. What did you learn as to the method employed where it was necessary to distribute the concrete at a point perhaps fifty or more feet away?

By Mr. Hood: Objected to as incompetent, in view of the previous testimony.

A. Inasmuch as the visit which was made by Mr. Woodward and myself was a private visit, and we were not accompanied by a representative of the contractor who was handling the work, I can only state the method which I, myself, would pursue with this particular equipment, and such method would consist of adding a sufficient length of pipe to the point in question and so adjust the entire run of pipe sections as to permit the wet concrete to flow properly by gravity.

Q. 14. From what you learned from an inspection of this apparatus, what would you have done to distribute concrete to the different floors as the building became higher to deposit the concrete over the entire floor area?

A. I would first determine whether the tower had adequate height to allow the distributing system through all its length to have suitable pitch, so as to permit of the proper flow of the concrete, through the pipes, and if the tower was not sufficiently high I would then increase the height of the tower, so as to give the proper gradient to the [fol. 17] pipe system, in order that the concrete might flow by gravity to the most remote point on the highest floor.

Q. 15. Assuming that the hopper in your sketch remained at a fixed height, and that you wished to distribute concrete to a higher floor, what other method would you adopt if you found that adding further lengths of pipe made the slope too gradual?

A. If it should be impossible to raise the tower to a greater height, I would then deliver the concrete through the pipes with wheelbarrows or buggies located as remote from the tower as the relative position of the hopper and the floor being concreted would permit.

Q. 16. In answer to Q. 13 you stated that to change the point of delivery you would add a sufficient length of pipe to the point in question, and so adjust the run of pipe sections as to permit the concrete to flow. Explain what you mean by "adjust the run of pipe."

A. What is meant by "adjusting the runs of pipe" is the arrangement of the sections of pipe between the hopper at or near the top of the tower, and the last or lower section of pipe, which I have designated as the delivery section.

Q. 17. Please state what you or your workmen would do in making this so-called adjustment.

A. The amount of changes to be made in the delivery pipe would be regulated by the nearness or the remoteness of the point of delivery upon the floor to the elevating tower, and if delivery were required on any given floor close to the tower, this might involve removal of one or more sections of pipe, whereas if delivery were to be made at a point of the floor remote from the elevated tower, this might require the insertion of additional sections of pipe.

Q. 18. In other words, you would either lengthen or shorten the sections of pipe as the occasion demanded; is that it?

[fol. 18] A. That is correct.

Q. 19. You have stated that the concrete was comparatively wet. What was the prevailing practice at that time with reference to the consistency of concrete?

A. The general practice which was followed in making concrete, as known to me at that time, was to use only a moderate amount of water in the mixing of the concrete, so that the resulting mixture was comparatively dry. After placing the concrete in position it was the general practice at that time, as known by me, to tamp the concrete until the water in the mixture flooded the surface of the concrete.

Q. 20. Did this practice that you speak of continue after it became customary to embed vertical reinforcing bars in the concrete, as in columns, for example?

A. My observations upon the art and practice of making and placing concrete in conjunction with reinforcing steel showed a distinct tendency to increase the amount of wetness of the concrete mixture, in order to ensure the more complete coating of the reinforcing steel with the grout in the concrete, the object of this being to derive a resultant so-called reinforced concrete, in which the reinforcing steel would be in intimate contact with the body of concrete throughout the entire length of the reinforcing bars, and over their entire surface.

Q. 21. About when did reinforced concrete come into widespread use, as distinguished from heavy foundation work without reinforcement?

A. As far as my personal knowledge goes, the first attempts that were made to disseminate specific knowledge concerning reinforced concrete, and to bring about its introduction into general building work, were made in the early nineties.

Q. 22. About when did it come into widespread use, more particularly in tall buildings, as distinguished from low structures?

A. My personal knowledge of the application of reinforced concrete to building construction indicates that the earlier applications of reinforced concrete to buildings consisted of the construction of short span concrete floors supported on a steel framework; and this method of construction had become fairly general as early as 1900, this floor construction consisting of reinforced concrete. As I recall the development of the industry, structural reinforced concrete, by which I mean the building of columns, girders, and beams, as well as the building of reinforced concrete floors, became quite general between 1900 and 1905, and had become a very general practice by about 1910 or 1912. It is my recollection that at or about 1905 there was built in the City of Cincinnati a reinforced concrete building, in which all of the parts were reinforced concrete. This building, as I recall it, was twelve, or fifteen, or sixteen stories high, and, as I remember discussions at that time of the subject, many people in the building industry expressed amazement at the

application of reinforced concrete to the structural parts of so high a building. So far as was known to me, however, this building was a success structurally, and with the passing of time it became more or less general to build what was commonly described as tall buildings using reinforced concrete construction throughout. The use of the term "tall buildings" does not apply, however, to such structures as the Metropolitan Life Insurance tower, the Singer Building, and the Woolworth Building.

Q. 23. You have stated that the increasing use of reinforcing steel in the concrete resulted in the use of more water in the concrete [fol. 20] mixture. What effect, if any, did the development of the forms themselves have on this evolution toward wet concrete?

A. When it was the practice to make concrete in what is known as a dry mixture, it was the general practice to use square-edge lumber for forms, and as the wetness of the concrete was increased, for the purpose of improving the bonds between the reinforcing steel and the concrete, it became the practice to use matched lumber in the forms in order to avoid the loss of cement grout from the wet concrete by the grout washing out through the joints in square edged lumber.

Q. 24. Was this improvement in the forms a sudden or a gradual development?

A. A gradual development.

Q. 25. Was the evolution of wet concrete a sudden or a gradual one?

A. So far as my observations go, the evolution of wet concrete was gradual, as many architects and engineers for a long time evidenced a desire to adhere to the earlier established methods of making concrete of a comparatively dry mixture.

Q. 26. About how many times did you inspect the apparatus on the American Theater Building?

A. Only once.

Q. 27. Was there much or little comment regarding the novel apparatus used on the American Theater Building?

A. I can only answer that question so far as my associates and myself are concerned. We discussed the matter at considerable length, but did not consider it wise at that time to abandon the system of wheel-barrow and buggy deliveries, which we were then using.

Q. 28. Are wheel-barrows and buggies still used today?

A. The only answer I can make to that question is to state that [fol. 21] in passing about from place to place and casually observing construction work as it is being carried on is to me somewhat of a surprise to note the almost universal use of the tower-distributing system. I could not state, however, that wheel-barrows and buggies are not used.

Q. 29. Are you in the concrete business today?

A. I am not.

Q. 30. For how many years have you been out of touch with it?

A. I have been out of touch with concrete construction business for about four years.

Q. 31. I take it, then, that what you mean by your observations of tower-distributing systems is that where they are used they are very conspicuous structures, whereas the use of other apparatus is less easy to see from a casual observation; is that correct?

A. That is correct.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 32. Do you recall the time in the year 1907 when you inspected the apparatus at the American Theater & Hotel Building in St. Louis?

A. As I stated, it is my recollection that the inspection of the American Theater Building was made by me during the time that is known as the "open building season." I particularly remember that the day was a bright, sunny day.

X Q. 33. Do you think it was somewhere along about June or July?

A. I am more inclined to think that it was in August, for I have a vague recollection that it was reported that the owners were anxious to have the theater completed as early as possible.

[fol. 22] X Q. 34. At what floor level were they depositing concrete?

A. It was my recollection, as previously stated, that my inspection was made on about the fourth or the fifth floor.

X Q. 35. Do you recall the details of construction of the flexible joint which you have mentioned?

A. I do not recall the specific details of the flexible joint, the point which I do recall is that the connection at the upper end of the delivery section of pipe to the upper sections of pipe was so made that the delivery section could be swung.

X Q. 36. And how was this flexible joint supported?

A. It is my recollection that this was supported by wire or cable to the steel frame overhead.

X Q. 37. Then, the chute sections were threaded down through several stories of the steel framework of the building; is that right?

A. That is my recollection.

X Q. 38. During the past few years, as you have gone about the country, has your attention generally been arrested by reinforced concrete buildings under construction?

A. Because of my connection with the building of reinforced concrete construction, extending over a period of about fifteen years, I have a natural interest in such construction, and, consequently, am generally inclined on seeing work of such character being performed to observe with a greater or less degree of care the methods being pursued, and with the passing of time have noted that whereas when chutes were first used the inclination of the chute was quite steep, these chutes as now installed are far less steep than formerly.

[fol. 23] X Q. 39. You still possess the ability to note, in passing

construction work, the general character of the methods of fabrication in use, do you not?

A. I believe so.

Deposition closed.

Andrew W. Woodman.

Adjourned until Tuesday, December 21, 1920, at 10:30 A. M.

December 21, 1920.

Parties met pursuant to adjournment. Present as before.

LEOPOLD J. MENSCH, a witness produced, sworn and examined on behalf of defendants, deposes and testifies as follows in answer to interrogatories by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Leopold J. Mensch; 48 years; 2929 Michigan Avenue, Chicago, Illinois. I am a contracting engineer.

Q. 2. Please state more fully the character of your business, and refer to some of the structures which you have built.

A. My business is the design and construction of reinforced concrete engineering works and buildings. Amongst the larger buildings and structures I was connected with are the Pugh Building in Cincinnati, a ten story building, in 1903; the plant of the Utah Copper Company in Garfield, Utah, in 1906; the Rocky Mountain Bell Telephone Company's Building, and the Utah Trust & Savings Building in Salt Lake City in 1906; the Seamons Bank Building in San Francisco in 1908, the Masouic Temple in Toledo in 1903; the Proctor & Gamble plant in Armourdale, Kansas, in 1903; two buildings for A. J. O'Leary & Son Company at Lake and [fol. 24] Desplaines Sts., Chicago, in 1910 and 1912; Rasmussen Company's Warehouse, Crosby St., Chicago, 1919; and the plant of the St. Louis Coke & Chemical Company, at Granite City, Illinois, in 1920, and many others.

Q. 3. Are you a member of any engineering organizations?

A. I am a member of the American Society of Civil Engineers, of the American Society of Testing Materials, and of the American Concrete Institute, and was actively contributing to the transactions issued by these societies.

Q. 4. Are you familiar with any of the work done on the Ingalls Building in Cincinnati?

A. Yes, sir.

Q. 5. State briefly what connection, if any, you had with it?

A. I was the man who first proposed to build this building of reinforced concrete, the intention having been to build this building of steel construction. I had at that time an office in Cincinnati, I think in the Union Trust Building, and the contract for the construction of the building was awarded to the Ferro-Concrete Construction Company, and they, starting in business with that particu-

lar building, had not had much experience in concrete construction, and I naturally watched the progress of the construction with interest. Towards the end of 1902 I had a visitor from New York (who now lives abroad), and he being also very much interested in concrete construction, we climbed to the second or third floor of the building while they were doing the concreting of the second or third floors, and I noticed that they were just finishing up the concreting of that particular floor around the portion of the building where the hoisting tower was located; and I noticed also that they used metal chutes [fol. 25] from the concrete hopper, which chute in my estimation was about 18 inches wide and possibly 8 inches deep, and maybe 16 feet long, and I saw that the end farthest away from the tower of the chute was held by a rope, or two ropes, fastened to the top of the tower and to the end of the chute, and one man was moving said chute back and forth a few feet while the concrete was running out of the end of the chute. I also noticed that they used a great deal of surplus water in doing so, and that a great portion of the floor was covered with water.

Q. 6. As I understand your answer, the apparatus consisted of a tower, with some kind of concrete hoisting apparatus in it, a hopper fastened to the tower, and a length of chute connected to the hopper at its upper end and freely suspended by a rope or ropes connecting the upper part of the tower with its outer end, so that it could be swung through an angle from one side to the other to vary the point of distribution of the concrete; is that correct?

By Mr. Hood: The question is objected to on the ground that it contains statements of details of construction which are not in any way referred to by the witness, and therefore leading.

A. That is so.

Q. 7. I hand you a photograph of a building under erection, and will ask if you can identify it. If you can, state how you identify it.

A. I think it is a photo of the construction of the Ingalls Building. I remember the advertisements on the walls, and I remember the sign, "The Pike," on the building opposite. I have forgotten what this sign referred to.

By Mr. Jones: The notary is asked to mark this photograph "Defendants' Exhibit 5, Photograph A of Ingalls Building."

[fol. 26] Q. 8. I hand you another photograph marked B, and will ask if you can identify the structure in it.

A. That seems to be the second floor of the Ingalls Building. I remember the chute and the hopper, and the tower work and signs on the wall.

By Mr. Jones: The notary is asked to mark this photograph "Defendants' Exhibit 6, Photograph B of Ingalls Building."

Q. 9. At the time you saw the apparatus of photograph B, was the outer end of the chute supported by the X-shaped horse or brace shown in the picture?

A. No, I saw the floor a few days later.

Q. 10. How do you know it was a few days later?

A. Because the steel is not placed on this floor, and it took them as a rule eight days to build a floor, so it must have been a few days after that I saw the floor.

Q. 11. Do you recall the names of any of the men engaged in the work of distributing the concrete?

A. I don't remember any of the workmen; I know only Mr. Culp, who was head carpenter, or superintendant, I can't recall now.

Q. 12. You have referred to the fact that the concrete was very wet; what was the prevailing practice at that time with regard to the amount of moisture in the concrete?

A. The concrete was supposed to be soft, like a thick soup, but shouldn't have had so much surplus water that it would stand on the floor.

Q. 13. What is the practice today in this regard?

A. The practice of real experienced men is to make the concrete soft; those who do not understand the laws governing the setting of concrete use very wet concrete, in order to reduce the amount of labor necessary for spading and distributing concrete.

Q. 14. I call your attention to a copy of the Engineering News [fol. 27] of July 30, 1903, particularly pages 90-97 thereof, and will ask if the Ingalls Building referred to therein is the one which you have been describing?

A. Yes, sir.

Q. 15. Please compare the illustration Fig. 14, on page 97, with "Defendants' Exhibit 5."

A. They seem to be the same picture.

Q. 16. Is wet concrete used more or less extensively at the present time than it was when the Ingalls Building was built in 1902-1903?

A. Wet concrete is a great deal more used today than formerly.

Q. 17. During what approximate period of years would you say that it came into extensive use?

A. Every year more contractors go into business, and the less experience they have the more they use wet concrete. The more reinforced concrete came into use, the more contractors used wet concrete; and I should say that from 1908 on very much the greater portion of construction work was done in concrete than before; hence, also, more wet concrete was used since that time.

Q. 18. I call your attention to a volume entitled, "Transactions of the American Society of Civil Engineers," Vol. LX, June, 1908, p. 494, and will ask if you are the L. J. Mensch whose comments are printed therein?

A. Yes, sir, the statement includes the following:

"The statement, that the McGraw Building is higher than heretofore considered practical, must be contradicted. The height of the Ingalls Building, in Cincinnati, is about 220 ft. above the basement, * * *."

This discussion was part of a paper on reinforced concrete work of the McGraw Building, presented at the meeting of the American Society of Civil Engineers at New York City, November 20, 1907. [fol. 28] The following extracts are taken from this publication, relating to the McGraw Building, West Thirty-ninth St., between Seventh and Eighth Avenues, New York, an eleven story building:

Page 453:

"The concrete work of the building proper was begun in the basement in September, 1906, and the concrete parapet walls on the roof were completed on April 15, 1907."

Page 454:

"All the construction work of the building was carried on from a high central temporary timber tower running from the basement to a height of nearly 75 ft. above the roof. This timber tower was 31 ft. square, and built with 10 x 10 in. yellow pine spliced corner posts properly braced. Each 10 x 10 in. corner stock carried a derrick boom 75 ft. in length. These derricks were first placed low down on the tower, and then raised from time to time to elevations required by the progress of the work. The booms were long enough to command the entire area of the work, and had a sufficient swing or reach to pick up material, including sections of the steel columns, delivered in the street, in front of the building, and put it in its proper permanent place. The hoisting engines were placed in the basement, and steel cables ran from them up to the derricks."

Page 455:

"The consistency of the concrete was very nearly or quite wet enough to be that termed semi-liquid, so that it was truly 'poured' into all forms for columns, walls, and floors."

Page 456:

"The quantity of water used (referring to the specifications for this building) shall be sufficient to make a wet or even semi-liquid concrete, so that it will readily run or flow into all the small spaces to be filled around all classes of steel reinforcement, whether in the floors or in the columns."

[fol. 29] Page 481:

"* * * * all concrete was hoisted to each floor in buckets dropped through the elevator shafts to the mixers, which were in the basement and placed so as to dump directly into the buckets as they rested. The booms swung the buckets so that they could be

dumped exactly at the desired points, thus obviating the use of other hoists, hoppers, wheel-barrows, runways, &c. This method proved so effective that very often the cost of all labor on concrete for considerable quantities would not exceed 40 cents per cu. yd."

It is hereby stipulated that the foregoing extracts, except that from page 481, were published prior to November 20, 1907, and that the last extract, to-wit, from page 481, is a report of statements made by Mr. E. P. Goodrich at the meeting of the American Society on November 20, 1907, and was published at least as early as June, 1908.

Q. 19. Prior to the time you saw chutes used for distributing concrete in Cincinnati in 1902, had you ever seen chutes or pipes used for this purpose?

A. Yes, sir. I saw chutes used in 1895, in the city of Vienna. We used chutes in the United States in every building we built—short chutes, from the mixer to the hopper or to a bucket in every case in every building, and at the end of concreting each floor we used a chute from the hopper, a coal chute, possibly 10 ft. long. The last kind of chute was used because all planks for wheeling had to be removed, and there is no other practical way to finish out the concreting, except shoveling the concrete from near the hopper to about 15 ft. around the hopper.

Q. 20. Aside from the chutes you have referred to, have you had any experience or seen distributing apparatus used in connection [fol. 30] with docks or underwater construction? If so, describe such apparatus, as used prior to 1908.

By Mr. Hood: Reference to operations in Vienna objected to as irrelevant.

A. I came to the United States in 1900, from Paris; and since that time I saw chuting done in 1903 in the Masonic Temple at Toledo. As to dock work and underwater work, I know it is necessary to distribute the concrete by means of chutes or pipes from about 10 feet above the water to the lowest point the concrete has to reach; and these pipes are generally handled by cranes or derricks, which swing the pipe to the location where concreting is to be done. I haven't seen it in this country, but I have seen it in Europe; and I have also seen photos and descriptions of similar work being done in this country. It has been used in the Detroit tunnel.

By Mr. Hood: The statements of the witness relative to underwater work in this country are objected to as hearsay and secondary.

Q. 21. You have referred to the Masonic Temple in Toledo; can you produce a sketch of a concrete-distributing apparatus used on that building?

A. Yes. The Masonic Temple in Toledo is about 100x110 ft. in area, and is about 70 ft. high. In the center of the building a large tower was erected about 10 ft. square, heavily braced, and bolted together, and the tower was erected to a height of about 120 ft. On this tower, on diagonal corners, there were fastened two derricks, with a boom of about 50 to 60 ft. These derricks were used in the

first place for raising the concrete in buckets from the basement, the concrete being filled into the bucket from the mixer by small chutes. For the corners of the building we had to use another way to reach the concrete than by depositing the concrete direct from [fol. 31] the bucket. We had to set up a temporary hopper, into which the buckets were emptied, and from there we used two short chutes to reach the farthest corners of the building, as shown in shaded lines on one of the sheets.

Adjourned until 2 p. m.

Met pursuant to adjournment.

Q. 22. Could the boom be raised at its lower end, or was it fixed permanently in place?

A. It appears to me the boom was raised once, at its lower end.

Q. 23. Do you mean that you recall that it was raised?

A. Yes, sir.

Q. 24. Do you recall how the chutes and the hopper were moved from one corner to the other?

A. No, I haven't seen the moving of the hoppers and chutes, but I have seen the moving of everything else on the floor.

Q. 25. Do you mean that they moved everything else except the chutes?

A. No, I saw them moving steel rods on the floor and lumber, moving it from one floor to the other, so I assumed that the heavy hoppers and chutes were also moved by the derricks; the brick and stone were also moved by the derricks.

By Mr. Jones: The notary is requested to mark the photograph of page 97 of the Engineering News of July 30, 1903, as "Defendants' Exhibit 7, Photograph C of Ingalls Building," and to mark the two sheets of sketches as "Defendants' Exhibit 8, Sketches of Masonic Temple Apparatus."

Q. 26. About what percentage of all the concrete work being done at the present time in this country is carried out by the use of a series of chutes, as distinguished from concrete deposited from carts, cars, buckets and other equipment?

[fol. 32] By Mr. Hood: Objected to as incompetent, the witness not having been shown to have knowledge of all the concrete work carried on in the country.

A. You mean what I saw myself?

Q. 27. I mean, from your experience in work of this character, what would you estimate to be the proportions referred to?

A. From five to ten per cent is done by chuting instead of wheeling or carting.

Q. 28. Do you consider yourself well informed on this subject, and to what extent have you kept in touch with concrete construction developments, through observation, reading, and attendance at scientific meetings?

A. I am now twenty years in the concrete business exclusively in this country. I travel around the country a great deal. I have done business from coast to coast, am reading all the periodicals pertaining to concrete and civil engineering generally; and am always particularly interested in new constructions methods, and have attended most of the meetings of the American Concrete Institute, and the meetings of other engineering societies.

Q. 29. From your experience, what can you say as to relative cost of distributing concrete by use of the two general types of apparatus you have just referred to?

A. That depends somewhat on the nature of the work. If I have to build a structure near a railroad, and there is only room on one side of the railroad for storage of materials, and I have to build the building on the other side, chuting from a tower on one side of the railroad to a tower on the other side of the railroad, is the most practical and cheapest way of distributing the concrete; or if you have to span a deep cut or valley, chuting is the most economical way; otherwise in my experience chuting is considered dearer than distributing concrete by carts or dump cars.

[fol. 33] Q. 30. How do you account for the expense of the chuting method?

A. It takes a very much heavier tower when you do chuting. It takes a heavier hoisting engine. You have to rely a great deal on a single man, who works under difficulties on top of the tower, when he releases the concrete into the chutes. If he is not very careful and knows his business well, concrete will accumulate at some point in the chute and slop over, and concreting often has to be stopped for hours at a time, while the wages of the men go on. Furthermore, if the man is not very skilled, the cement and sand will flow out first of the hopper on top of the tower, and then only the stone, poor in cement and mortar, is let out afterwards, and is conducive to poor concrete—and poor spots in the building or structure. You are also greatly dependent, when chuting, on the men at the mixer, who chute the concrete from the mixer into the hoisting box. If the mixture is a trifle too dry when it goes into the hopper, the concrete will not flow in the chutes, and delays of a quarter to half an hour occur to get rid of this dry concrete by some means, generally by dumping it from the tower to any convenient spot on the ground. Another disadvantage of chuting is that the chutes have to be cleaned, because a great deal of mortar and concrete accumulates at various points of the line, and it generally takes two or three good climbers to do this work in the evening, or when you stop concreting. These men are hard to get, and when you have them they generally do not want to do anything else. Another disadvantage of chuting is that you have to hoist the concrete a great deal higher than necessary, which slows up concreting a great deal, and it requires much more expensive equipment. In winter chuting ought to be absolutely prohibited, because the concrete, while it is flowing through the chutes, is very materially reduced in temperature and arrives at the point where it is to be deposited in nearly frozen condition. The rigging up of the various contrivances

to do the chuting is very expensive, and unless the job is very large, will alone cost more, in my experience, than the entire cost of the concrete work by other means. The fact is, to my knowledge, the largest structures which have ever been built in this country have been built by using carts, and the lowest cost records have been made by using cars in opposition to chuting. I can mention one particular case in January, 1916, on a building at Ward St. and Diversey—my own building—about 150 ft. square, where I did the concreting from one corner of the building at a cost of 40 cents per cubic yard, including the heating of the materials and the melting of snow on the floor.

Q. 31. Are you familiar with the apparatus in Philadelphia which is alleged to be an infringement of the patent on which this suit is based?

A. No, sir.

Q. 32. Have you kept cost records, and have you knowledge of the records of other engineers and builders as a basis for your answer to Q. 30?

A. I don't know quite what knowledge you refer to. Yes, sir, I kept cost records of chuting, and of doing concrete work by other means; and from my knowledge of the facts, and I was the man who paid out the money in each case, I know what the relative costs are.

Q. 33. From your acquaintance with other men in the same business, and from your general knowledge of the art, would you say that you are alone in the opinions you have expressed?

A. No, I am not alone. To my knowledge the largest contractors in this country, for example, the Turner Construction Company of New York, and the Aberthaw Construction Company of Boston, [fol. 35] used up to this year carting nearly exclusively for distributing concrete, and if they ever used chutes, they did it to find out the relative cost, or to impress the owner with the great modern appliances they have to use to execute their work. Or if they lately used it, it may be for the reason that the former managers, who were well-informed about concrete work, do not take any more as active an interest in the construction work as they did formerly.

Q. 34. Did engineers and architects take readily to the use of wet concrete when it came into more general use about 1908, as you have stated?

A. No, sir, they considered it a necessary evil, and a joint committee of the American Society of Civil Engineers, of the American Society of Testing Materials, of the American Railway Engineers Association, and the National Concrete Institute very seriously considered to entirely prohibit chuting on any of the structures executed by their members.

Q. 35. About when would you say that the building of reinforced concrete buildings, meaning those with vertical reinforced columns as well as floors, began its period of expansion or wide general use in the United States?

A. I think in the year 1908 all-reinforced concrete structures came into use a great deal more than before.

Q. 37. What can you say with regard to these developments in the United States as compared with those abroad?

By Mr. Hood: Objected to as immaterial.

A. I should say that they were from ten to twelve years ahead in Europe in the art and use of reinforced concrete.

Q. 38. What relation did the increasing use of reinforcing bars [fol. 36] in concrete bear to the proportions of water employed?

A. More water had to be used in reinforced concrete than in plain concrete to make the concrete flow around the reinforcement without too much time being spent on making the concrete go around to the reinforcement, or fill the space within the reinforcement.

Q. 39. What effect, if any, did the San Francisco earthquake have on the concrete building industry?

A. It created a lot of reinforced concrete contractors, and while in San Francisco before the earthquake there were two or three concrete buildings, there were about two or three hundred reinforced concrete buildings two years after the earthquake.

Q. 40. What effect, if any, did the wide use of batch mixers have on the moisture in concrete?

A. It led to the use of wet concrete.

Q. 41. How do you fix the date when you did your work in Salt Lake City on the Utah Trust & Savings Bank and the Utah Copper Company's plant?

A. I was in Europe the winter of 1905-6, and went direct from Europe to Salt Lake City to start operations there.

Q. 42. What concrete distributing apparatus did you use on the Utah Copper Company's work?

A. Mostly carting, but for the construction of the ore bins I used a great deal of chuting.

Q. 43. Please prepare a rough sketch of this apparatus.

A. I have done so. The sketch shows the ore bins, which were about 30 feet wide and 300 feet long, and about 25 feet deep, and the location of the ground was such that the mixer had to be placed about 50 feet higher than the bottom of the bins, and about 30 feet away from the side of the bins. In order to convey the concrete [fol. 37] from the mixer into the bins, I used two chutes for a part of the concreting. One chute was about 40 feet long and reached from the mixer to about 6 feet from the side of and about 3 or 4 feet above the top of the bin. The other chute was a short chute which reached from the end of the first chute to the concrete floor, or the walls of the bin nearest to the mixer. For the part of the structure farther away from the mixer I used carts.

Q. 44. Were these chutes moved at all during the operation?

A. The short chute was moved, but not the long one—see dotted lines. The carts were filled from the end of the long chute. There was a little gate there.

Q. 45. Referring to the extract from page 481 of the Transactions of the American Society of Civil Engineers, previously referred

to, about how long after the meeting would that discussion have been published in accordance with the usual practice?

A. Two or three months.

By Mr. Jones: The notary is requested to mark the sketch produced by the witness "Defendants' Exhibit 9, Sketch of Utah Copper Company's Bins."

Q. 46. Was apparatus similar to that used on the Toledo Masonic Temple used on any other building?

A. I saw it used by the Ferro-Concrete Construction Company in 1904 at the American Book Company's Building in Cincinnati, near the Pugh Building, previously referred to.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 47. Going back to your experience with the Ingalls Building in Cincinnati, of which you have testified, about how far was the point at which you saw the concrete being deposited from the tower [fol. 38] in which the hoisting bucket was arranged?

A. I should judge from 16 to 20 feet.

X Q. 48. How high was the hopper from the floor level?

A. I should say from 6 to 8 feet.

X Q. 49. Do you think it likely that the elevation of the hopper relative to any particular floor of the building would be changed from time to time during the distribution of concrete on that particular floor?

A. I don't think so.

X Q. 50. The hopper in that apparatus was a sort of inclined chute, about 6 or 7 feet long, wasn't it?

A. Yes, sir.

X Q. 51. And one end of that hopper was supported on the tower, while the other end was supported by a frame leg structure that rested on the forms for the floor that was being poured; is that right?

A. I cannot recall the support of the hopper at the farther end to which you refer.

X Q. 52. That hopper delivered at its outer end into a chute section that was about 8 or 9 feet long, didn't it?

A. Well, it appeared to me more than 9 feet.

X Q. 53. Do you recall just how the receiving end of that first chute section was supported with relation to the delivery end of the spout-like hopper?

A. No, I didn't notice that until I saw it today in the photo.

X Q. 54. Is the photo to which you have just referred either one of these two photographs which I now show you, and which are marked for identification, respectively, "Defendants' Exhibits 5 and 6"?

A. It is photo B.

X Q. 55. Now, Mr. Mensch, isn't it a fact that at the time when you specially noticed the photographs showing the mounting of

[fol. 39] the receiving end of the chute, you had in your hand another photograph which shows much more clearly than this Exhibit 6 the character of the mounting end of the receiving section?

A. I didn't look at that part of the picture. I had the photograph in my hand, though.

By Mr. Jones: The photograph referred to, not having been offered in evidence or referred to in the testimony, objection is made to consideration of it at this time.

By Mr. Hood: In view of the fact that the witness had this particular photograph, just referred to by counsel for defendant, in his hand during the taking of a portion of his examination-in-chief, and in further view of the fact that said photograph shows much more clearly the character of the construction under discussion, and was evidently taken at about the same time as the other two photographs which have been identified, counsel for defendant is asked if he is willing that said photograph be presented to the witness for identification, in order that it may be offered in evidence?

By Mr. Jones: For the purpose of fully advising the court of all the details of this apparatus, the photograph is marked for identification "Defendants' Exhibit 10, Photograph D of Ingalls Building."

X Q. 56. Do you recognize "Defendants' Exhibit 10" as a photograph of the Ingalls Building outfit, taken at about the same stage of progress of the work, or at least at about the same floor level, as "Defendants' Exhibits 5 and 6."

A. I recognize the picture as pertaining to the Ingalls Building, but I have not seen more than one chute used on the Ingalls Building, and this picture was evidently taken a few days previous to my visit.

[fol. 40] X Q. 57. In the three photographs, Exhibits 5, 6 and 10, how is the outer end of the first two sections supported?

A. Both photographs show an X support. Exhibit 5 appears to me to show that the outer end of the first chute was bolted to the next chute while Exhibits 6 and 10 show X braces were the support of the outer end of the first chute.

X Q. 58. Now, please examine Exhibit 5 through the magnifying glass, and see if it is not a fact that the view is taken looking directly along the line of delivery of the chute-like hopper, and that there is, extending towards the observer and in direct alignment with this hopper, a chute section, the delivery end of which is in position to deliver to what you have termed the "first chute section," and which is extended off to the right in a plane substantially parallel with the picture plane.

A. Yes, that is correct.

X Q. 59. So that this Exhibit 5 has a first chute section which is extended out from the hopper in line with the delivery line of the hopper in the same way as appears more clearly in Exhibit 6?

A. Yes, sir.

X Q. 60. What is your recollection as to the angle of inclina-

tion of this first chute section which you say you saw swung from side to side in delivering the moist concrete?

A. It appeared to me very steep, because I was standing in about the same position where the picture A was taken.

X Q. 61. What is your recollection as to the length of the hopper, that is, how far out from the tower did it extend?

A. About five to six feet, possibly a little more.

[fol. 41] X Q. 62. In these photographs 6 and 10 the outer end of the hopper is shown as supported by a wooden framework resting upon the forms for the contemplated floor of the building, is that right?

A. Yes, sir.

X Q. 63. And in Exhibit 10 the receiving end of the first chute section, beyond the hopper, is supported in a sort of wooden cradle; and immediately back of the delivery end of the hopper the receiving end of the first chute section is filled with some blocks or bricks; is that right?

A. Well, I can't state from the photograph whether the near end of the first chute section was supported by a cradle. It might have been.

X Q. 64. Exhibit 6 also shows the receiving end of the first chute section supported in a wooden cradle and also by a sling of cable, the upper ends of which are suspended from the upper end of the wooden legs which support the outer end of the hopper from the centering forms of the building; is that right?

A. Yes, sir.

X Q. 65. You have criticised to a considerable extent the use of chutes for distributing concrete in building operations under most conditions; and I gather from that that you are in general opposed to the use of chutes for distributing concrete in the fabrication of reinforced concrete buildings, if such use can be avoided. Am I correct in that assumption?

A. Where I can use other means at less expense, I will always avoid the use of chutes.

X Q. 66. Is it your opinion that in the fabrication of reinforced concrete buildings, where you have ample storage space adjacent the tower, it is always more economical to distribute the concrete over the different floor levels by carts, or dump wagons, or wheel-barrows, rather than by the use of chutes?

[fol. 42] A. It is my opinion that in most cases the use of carts and proper runways is less expensive and will make for better work, and will save also in the cost of wall and column forms than when chuting is used.

X Q. 67. I suppose you have in mind in this connection the various chuting arrangements about which you have testified, and which you say you have used on your various jobs?

A. I have in mind chuting arrangements with wood or steel towers, with derrick-supporting counterweight bridges or girdles, from which chutings are suspended; and I have in mind chuting arrangements by means of heavy cables from which the chutes are hung by manila ropes, so that they can be raised or lowered at will.

X Q. 68. In your criticism you stated that a heavier tower construction would be required for use in connection with delivery chutes than would be required if the concrete is to be distributed by carts. Is that correct?

A. Yes, sir.

X Q. 69. Now suppose you had in one instance an apparatus such as you say you used on the Masonic Temple, where the boom is long enough to permit the dumping of the suspended bucket at a point in the floor area at the most remote side of the building; and another apparatus where the boom or derrick is not so long, but was merely long enough and heavy enough to support a first chute section, which would have a length, say, no greater than half the width of the building; which construction in your opinion would require the heavier tower construction?

A. There is no question that the tower at the Masonic Temple was very much heavier than a tower needed for chuting only, but, first of all, we learned a lesson there not to use such a tower again, and, second, that these booms set all the heavy stone work all around [fol. 43] the building, and thereby saved a great deal in the construction of the entire building.

X Q. 70. Before you place the out-board hopper structures in the Masonic Temple, the concrete at the point of setting of the hoppers had to be hard, didn't it?

A. No, sometimes we placed the corners first, and then we placed the concrete on the part nearer to the tower.

X Q. 71. When you poured the corner portions of the floor first, these hopper structures rested on the forms provided for the reception of the concrete which was ultimately to form the floor, didn't they?

A. Yes, sir.

X Q. 72. And if you poured the corner portions of the floor last, then you had to wait for the middle portion of the floor to set before you could place the hopper structure, didn't you?

A. No, sir.

X Q. 73. What did you do?

A. I can't recollect how we did it on that particular building, but I can tell you how we did it on other buildings.

X Q. 74. You don't recall, then, that in the Masonic Temple operations you ever delayed pouring the corners of the floor areas until after the central portion had been poured?

A. I am quite certain that these hoppers did not cause a delay of from more than four to ten minutes at any time. I do not remember just what order was observed in pouring various portions of the floor; we often had both booms in operation at the same time, one pouring corners and the other pouring center portions, and if we found it necessary to pour a center portion before pouring an adjacent corner, all we had to do was to lay some planks on the freshly poured concrete at the point where we desired to set the hopper structure, [fol. 44] and then to set the hopper structure on these points and go ahead.

X Q. 75. In using these hopper structures, as part of an apparatus

like that shown in your Masonic Temple structures, I presume you found it necessary to set special braces under your forms, didn't you?

A. I cannot recollect as to that particular building, but it is a standard rule which I impress on my men, that when they put up a hopper they should brace underneath.

X Q. 76. What is your nationality, Mr. Mensch?

Objected to as immaterial.

A. I am Austrian.

X Q. 77. You said something about the need of a heavier hoisting engine if the concrete was to be chuted, instead of being distributed by carts. I wish you would explain what you mean by that.

A. That is very simple. It is a common occurrence to see that the tower of a chuting arrangement is made about 100 feet higher than the tower of an arrangement which used carts, and very often the tower is made 150 feet higher. Now, assuming that the structure is only 60 feet high, and that you use, say, a mixer of three-quarter yard capacity of wet concrete, 16 h. p. hoisting engine is of ample capacity to hoist the concrete at the rate of a batch a minute, while if you use a tower made 150 feet higher, you have not only to do twice or three times the actual work of hoisting, but you have to do it in a much shorter time, and, therefore, you need a hoisting engine of at least 50 to 75 h. p. to do the same amount of concrete work.

Cross-examination closed.

Signature waived.

Adjourned till Monday, December 27, 1920, at 10 a. m.

[fol. 45]

Chicago, December 27, 1920.

Parties met pursuant to adjournment. Present as before.

WILLIAM R. SINKS, a witness produced, sworn, and examined on behalf of defendants, deposes and testifies as follows in answer to interrogatories by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. William R. Sinks; fifty-eight years; 25 Crescent Place, Wilmette, Illinois. I am manager for the James Stewart & Company, grain elevator department.

Q. 2. Outline briefly the character of the work done by James Stewart & Company.

A. The company does all classes of general construction work—office buildings, factory buildings, manufacturing plants, railroads, reservoirs, locks and dams, in fact, covering all lines of general construction. We have built the Westinghouse Electric Company's manufacturing plant at Pittsburgh, also their plant in England, known as the "Manchester plant," the greater part of the Allis Chalmers Manufacturing Company's plant at Milwaukee, the Singer

Sewing Machine Company's plants at South Bend, Ind., and St. John, New Brunswick, the U. S. Placima locks at Placima, La., and many other prominent jobs too numerous to mention, some of which are listed in our catalogue, and the value of which approximates about \$190,000,000. This catalogue was published about ten years ago, and since that time we have done an equal amount of business. We have built buildings in every principal city in the United States, and in every principal city in Canada, too, also in England.

Q. 3. Explain a little more fully the character of the construction work of which you personally had charge.

[fol. 46] A. I had charge of what is known as the grain elevator department. This department takes care of all the grain elevator work done by the company all over the United States and Canada. The work is of a special nature, and is practically all done by a few contractors who make a specialty of this class of business. They not only do the work, but make the design as well.

Q. 4. How long have you held your present position?

A. About fifteen years with the Stewart Company, that is, since about 1905. Prior to that I was with the Barnett & Record Company of Minneapolis, who were also specialists in grain elevators and design. I was with them twenty years.

Q. 5. Prior to 1905, what apparatus was used for distributing grain or conveying it from the elevator to boats?

A. Numerous devices were used, some of which are illustrated in a publication by George M. Moulton & Company, under date of May, 1902. On page 21 is shown a cross-section drawing of an elevator, and on either sides are spouts, which are typical of what was used at that time and prior to that time. Grain was brought into buildings of this character by railroad box cars. The grain was taken out of the cars and deposited in a pit, from which it was drawn into what is called an "elevator leg." This is an endless belt, with cups about 14 inches apart, the leg extending from the bottom of the pit through the top of the elevator. By rotating this belt the grain is carried up to the top of the elevator by the cup, and discharged into what is called a garner. From this receptacle or hopper, made of wood, steel, or concrete, the grain is drawn into a scale hopper, where it is weighed; and from the grain hopper the grain is drawn through a series of spouting to bins or conveyors. Some of the bins are known [fol. 47] as storage bins, while others are known as boat shipping bins. From the boat shipping bins the grain is drawn through a movable spout, which reaches into the boat or ship; and from the storage bin the grain is drawn into hoppers connecting with legs.

Q. 6. What do you mean by "drawn into?"

A. It flows by gravity.

Q. 7. Are you personally familiar with structures such as illustrated in this Moulton & Company's catalogue?

A. Yes, sir.

Q. 8. Have you ever designed such a structure?

A. Yes, sir. While I was with the Barnett & Record Company I acted in the capacity of general superintendent for all of their work,

and since becoming connected with the Stewart Company I have been the manager of the construction work as well as the manager in the preparation of the plans of practically all of the elevators which they built.

Q. 9. Describe more fully the series of spouting to which you have referred.

A. Directly under the scale is a movable spout. This spout moves in an entire circle and connects with conveyors, and also into other movable spouts, called universal or Mayo spouts. These universal spouts have an elbow joint about the center. The upper end of the top section is hung to the floor; the end of the elbow section is supported from a circular track by a trolley wheel; the lower end of the lower section is supported by a series of casters; and the whole is so arranged that it will reach any point within the extreme radius of the two sections.

Q. 10. Of what are these spouts made?

A. Sheet steel. I have seen them made out of wood, but very rarely.

[fol. 48] Q. 11. Describe the movable spout between the shipping bins and the boat.

A. This boat-shipping spout is made of steel in two sections, the lower section telescoping the upper section and supported from a boom, the boom being supported on the side of the elevator and made to swing back against the side of the elevator when the spout is at rest.

Q. 12. How is the spout supported from the boom?

A. By wire cable, usually fastened to the lower section; but in some instances this cable is fastened to the upper section, and the lower section is allowed to telescope the upper section by means of a slot in the lower section, thus to pass the fastening of the cable for the upper section. This particular kind of a spout is known in the trade as the "Ballinger patent spout."

Q. 13. Is the spout movable, aside from its telescopic action?

A. The spout is movable both up and down and sideways to the extent of a half circle. By "movable up and down" I mean with the upper end fixed to the building the outer end could move up and down to practically the extent of a half circle; it could also move in a horizontal plane to a half circle.

Q. 14. Explain more fully the purpose of having the boom and the spout movable.

A. The spout is made movable to adjust it for placing in the ship and in various positions in the ship; in order to deliver grain in the ship to any point within the range of the spout.

Q. 15. Refer to page 49 of the Moulton & Company's catalogue and explain briefly the equipment shown therein.

A. The illustration on page 49 shows the Erie elevator at Buffalo, N. Y. The plant consists of what is called a marine house and the [fol. 49] main elevator. The marine house is equipped with what is known as canal boat loading spouts. These canal boat loading spouts operate in the same manner as the one just described. The picture

also shows a spout leading from the marine house to the elevator. This spout is for conveying the grain from the marine house to the elevator. It is supported in the center by a trestle and is trussed in between the supports. I have seen this particular elevator in operation.

Q. 16. What is the frame just to the right of the boat?

A. It is a trestle and mast to support the canal boat spout.

Q. 17. Explain more fully the purpose of the canal boat spout.

A. This is for loading the grain into the canal boat, which take about eight thousand bushels each. The grain thus being loaded into the canal boat would come out through the conveyor gallery, as shown, re-elevated in the marine house, and spouted into the canal boat through the spout shown, and described above.

Q. 18. What delivers the grain into the canal boat spout?

A. The upper end of it connects with the spout, and the spout connects with the leg in the marine house. The lower section of the canal boat spout is not shown in the picture, but when the lower section is connected in place it operates the same as the boat-loading spout above described, and is hung from the mast shown in the picture.

Q. 19. What part of the spout or spout sections referred to is supported by the trestle?

A. The lower end of the main spout and the upper end of the lower section.

Q. 20. You have stated that this apparatus operates the same as the boat-loading spout previously described. Do you mean by this [fol. 50] that the lower section can swing from side to side, and also up and down?

A. The lower section can swing from side to side and up and down, but does not usually telescope, the length of it not necessitating telescoping.

Q. 21. From your previous answer, stating that these two types of spouting apparatus operate in the same manner, do you mean to imply that the trestle and mast, on page 49, are mechanically the substantial equivalent of the swinging boom of page 21?

By Mr. Hood: Objected to as leading.

A. The trestle and mast serve as a support, the same as the side of the elevator in the first instance.

Q. 22. What additional support, if any, is provided for the lower section of the spout, aside from the trestle?

A. There is the mast, to which a tackle is fastened at the top, and from there to the lower section of the spout. This is for adjusting the height and holding it in place.

Q. 23. Do I understand from your prior answers that it also permits this lower length of spout to be swung from side to side to change the point of delivery?

A. When suspended as described, it allows a free movement of the spout from side to side.

Q. 24. I call your attention to two blue-prints, and will ask if you are familiar with the apparatus illustrated therein?

A. I am familiar with the blue-print marked "Sheet 89," made by the Barnett & Record Company, as I had charge of the erection of this particular spout.

Q. 25. Does the date on the blue-print correspond approximately to the period of actual erection?

A. To the best of my knowledge, 1902 is the date when this spout was erected. The date on the blue-print is February 7, 1902.

[fol. 51] Q. 26. Do I understand that this work was done while you were employed by the Barnett & Record Company?

A. Yes, sir, it was. The spout was designed and used for conveying grain from an elevator known as "No. 2 St. Anthony Elevator" to "St. Anthony Elevator No. 3." The spout was made of No. 16 galvanized steel in sections about 15 ft. long and suspended from a cable.

Q. 27. About how high in the air was this spout?

A. The upper end is approximately 120 ft. above the ground; the lower end of the inclined portion is shown as 20 ft. above the ground.

Q. 28. Was it successful in use? If so, about how long was it used?

A. It was successful, and to the best of my knowledge the same kind of a spout is being used at the present time.

Q. 29. What can you say regarding the second blue-print?

A. The second blue-print, Sheet 58, was also made by Barnett & Record for the Minnesota Linseed Oil Company. I am familiar with this installation, but had nothing to do with the erection of it. The spout in general is the same in character, design and construction as the previous one, and is used for the same purpose, except that in this case they ran flax seed through it instead of wheat.

Q. 30. By the last part of your answer, am I correct in understanding that in your view as an engineer or designer it makes very little difference what material is conveyed through such spouts once the apparatus itself is available?

By Mr. Hood: Objected to as leading.

A. It makes no difference in my opinion. The spout is used really [fol. 52] to convey whatever material you want to move.

Q. 31. Is this conclusion true or not with reference to the marine spouts hung from a boom, which you have previously described?

By Mr. Hood: Objected to as leading.

A. The same is true.

Q. 32. Do these two blue-prints represent the only instances of the use of spouts of this character with which you were familiar prior to the time you left the Barnett & Record Company in 1905?

A. Oh, no, there were a great number of similar contrivances used about the mills at Minneapolis — some were used for spouting sacks of feed or flour, and mill products.

Q. 33. Whose initials appear in long hand on these prints?

A. R. H. Folwell.

Q. 34. Are you familiar with the handwriting?

A. Very. He was chief engineer for the Barnett & Record Company. He was also my chief engineer after coming to Chicago with the James Stewart Company for ten years.

Q. 35. What can you say as to his reputation as an engineer in connection with grain elevator construction?

A. He is one of the leading engineers in this particular construction.

The notary is asked to fasten the blue-prints together and mark them "Defendants' Exhibit 11, Barnett & Record Blue-Prints."

Q. 36. I call your attention to a book of the Webster Mfg. Co., containing their catalogue M, dated 1901, and having the name "R. H. Folwell" on the cover, and will ask if the illustration on page [fol. 53] 235 corresponds generally to any of the apparatus you have been referring to.

By Mr. Hood: Counsel for defendant is asked whether he relies on any portions of the publication referred to, other than page 235.

By Mr. Jones: We rely upon various portions of the book to illustrate the state of the art, more particularly pages 42, 168, 170, 192, 193, 197, 201, 236, and 240.

A. The illustrations on pages 235 and 236 are the same as those described as the Ballinger spout.

Q. 37. Are you familiar with the apparatus illustrated on pages referred to in the previous paragraph?

A. I am familiar with all of these.

Q. 38. At how early a period would you say that these devices were used, making a conservative estimate?

A. As early as 1904.

By Mr. Jones: The notary is requested to mark this book for identification "Defendants' Exhibit 12, Webster Mfg. Co.'s Catalogue."

It is stipulated that if a competent witness were called he would testify that the catalogues in this book were published in 1901.

Q. 39. In your experience prior to 1905, have you used concrete in your construction work?

A. Yes, we used concrete. It was used in the foundations of elevators very extensively prior to that date. Barnett & Record only built one concrete elevator prior to that date.

Q. 40. What were the specifications, generally speaking, with reference to the amount of water used in mixing concrete prior to that date?

A. Architects in general prior to the year 1904-05 demanded that concrete be mixed what is known as very dry, and to such a consistency that it required considerable tamping to make the

water flow on top; but grain elevator designers and contractors have never been governed by architects' rules and guidance or specifications, as the elevator designer generally built the elevator that he designed, or that some other Company designed; therefore they were a sort of law to themselves, and, in my opinion, were the first designing engineers and contractors to use what is known in the trade as "wet" or "sloppy" concrete. In my opinion this was brought about by the use of what is called "slip" of "movable" forms. By the use of such form, which is usually about 4 ft. high, the wall, column, or girders, is formed by filling the movable form with sloppy concrete and reinforcing, and at the same time constantly raising the form by a series of jack screws supported on steel bars, which are embedded in the concrete. The jack screws are fastened onto these bars, and by turning down the jack screw the form is forced up; thus making the structure one monolithic mass; but to do this the concrete had to be run into the form in a liquid state, and such a liquid state that it did not require tamping, but only spading.

Q. 41. During the first year or two that you were with the James Stewart Company, were any concrete grain elevators built under your supervision?

A. Yes, sir.

Q. 42. Prior to 1907, for example, what apparatus did you use for distributing the concrete in building grain elevators?

A. From the mixer the concrete was spouted into a hoist hopper. This hoist hopper was hoisted by power to the top of the building as it was in course of construction. When reaching the top a gate, which was provided on the side of this first hopper, was opened and [fol. 55] the concrete material allowed to discharge through a spout into another similar hopper, but stationary. This last-named hopper was usually located about from 15 to 20 ft. away from the side of the hoist tower, and in the elevator work was supported on the movable form. From this hopper the concrete was drawn into wheelbarrows or concrete carts, and with these distributed into the various walls, columns and floors.

Q. 43. Are you familiar with concrete-distributing apparatus used at the present time, consisting of a tower, hoist, hopper at some high point on the tower, and a chute or series of chutes extending from the tower and supported sometimes from inclined cables and sometimes from a boom?

A. I am.

Q. 44. To what extent have you used such apparatus up to the present time in building grain elevators?

A. I have never used it but on one job.

Q. 45. What other concrete structures have you built besides grain elevators during your past experience?

A. I have built warehouses, dry docks, office buildings, and factory buildings.

Q. 46. To what extent have you used this modern chuting apparatus in building these structures just mentioned?

A. I never used the spouting system in question on any construction, except one elevator.

Q. 47. Why have you not used it more?

A. In my opinion it was too expensive in first cost of spouting, towers, hoisting, &c., besides it is more or less hazardous, and it is not adaptable to elevator construction above the foundation.

Q. 48. Why not?

A. The principal reason is that the walls of the elevators are thin, ranging from 6 to 8 inches, and it is impossible to spout concrete [fol. 56] into these walls without getting too much in various places, and the frequent changing of the spout necessitates much more labor than is required to deposit the concrete as and where wanted by concrete carts.

Q. 49. Have you given any consideration to the comparative cost of building structures, using these high towers and chutes, as compared with carts and similar appliances?

A. I have made calculations of the cost of various spouting plants that I have come in contact with, and taking into account the amount of concrete to be poured, in my opinion the cost of the spouting equipment, including the tower and the extra hoisting, made necessary by the high tower, is greater than the total cost of the labor necessary to deliver the same amount of concrete in the forms by hand and by the use of carts and wheelbarrows. This condition is not universally so, but it is so in a great many cases.

Q. 50. You have referred to the forms as necessitating wetter concrete; are there any other developments which have promoted the use of more water in the mixture?

A. In the use of reinforcing, and particularly where the reinforcing is very close together, it is absolutely necessary to have the concrete in liquid form, so as to thoroughly embed and encase the reinforcing.

Q. 51. What do you refer to by "reinforcing"?

A. By "reinforcing" I mean the embedded steel bars.

Q. 52. What is the practice of architects today with reference to the use of wet concrete?

A. I don't think I am competent to say just what they are, only from general knowledge—we don't work under architects. My general knowledge is that they still want the concrete reasonably dry.

[fol. 57] Q. 53. Is more wet concrete used today than when you came to Chicago in 1905?

A. Very much more.

Q. 54. Are you familiar with the use of booms in buildings other than the grain elevators you have referred to?

A. Yes, we use booms on all our derricks.

Q. 55. Describe the use of booms in erecting the steel framework of modern steel buildings.

A. Sometimes we put a boom on the columns of the building; this for hoisting materials into the various stories. In erecting the steel framework we use the regular stiff leg derrick, consisting of a mast, boom, sills, stiff legs. The stiff legs are used to support the top end of the mast and hold it in vertical position. This style of derrick is usually used to erect steel work on buildings, and it is

generally customary to use more than one, and so locate them that one can pick up the other and put it on the next story above as the building is raised.

Q. 56. In other words, as the building get- higher, there is always a boom at or near the highest story of the steel framework, is that correct?

A. No, that isn't quite correct. The derricks would be so located that you could set another derrick on the highest steel work.

Q. 57. Have you ever seen booms used having their lower ends vertically adjustable to raise the boom higher?

By Mr. Hood: Objected to as leading.

A. We sometimes used a boom in connection with the columns of the building, using the column as a mast, and as occasion demanded raised the boom up from story to story. Such arrangement is not used for putting material on the top of the building; it is used for landing material on the various floors as the building goes up.

Adjourned until 2 p. m.

[fol. 58]

December, 28, 10 a. m.

Met pursuant to agreement; present as before.

Q. 58. About how early have you seen vertically adjustable booms used, such as described in your last answer?

A. I should say about twenty-five years.

Q. 59. You saw the elevator shown on page 49 of George M. Moulton & Company's catalogue, as you have previously testified. When did you see this installation, and particularly the spouts and their support used in loading canal boats?

A. As early as 1904.

Q. 60. How do you fix the date?

A. I was building the Marine elevator, just a few blocks away from this one, and was well acquainted with the superintendent that ran this elevator, and visited with him. I fix it by the date of my marriage in that year.

Q. 61. Will you give a partial list of grain elevators which have been built under your supervision?

A. In the United States the following elevators are some that I have had supervision of: American Malting Company, Buffalo; Marine Elevator, Buffalo; Perot Elevator, Buffalo; Girard Point, Philadelphia; Baltimore & Ohio, Baltimore; Northern Central Elevator, Baltimore; Milwaukee Elevator, Kansas City; Sunset Elevator, Galveston; Washburn & Crosby Elevator, Buffalo; Washburn & Crosby Elevator, Minneapolis; Cargill Elevator, Minneapolis; Standard Milling Company, Duluth; Peavy Elevator, Duluth; Canadian Pacific, Fort William, Canada; and possibly a dozen more in Canada, and a great many more in the United States.

Q. 62. Have you seen any other canal boat loading spout devices, of the kind shown on page 49 of the previously mentioned catalogue?

[fol. 59] A. Practically all elevators in Buffalo had the same or similar devices for loading canal boats at that period.

Q. 63. About when did you first learn of the existence of the patent in suit?

A. I don't remember just the date, but some two or three years ago I heard there was such a patent.

Q. 64. When did you learn that it was involved in litigation?

A. Only recently. I was very much surprised to learn there was any litigation on this proposition?

Q. 65. Why were you surprised?

By Mr. Hood: Question objected to as wholly immaterial.

A. Because it seemed to me that spouting of all kinds of material that could be spouted had been in use for years.

Q. 67. Do you know what company or companies sell chutes and related appliances for spouting concrete?

A. The Insley and Lakewood Companies.

Q. 68. Do you know anything about the prices charged by either of these companies for this apparatus?

By Mr. Hood: Objected to as immaterial.

A. They have quoted us on this class of equipment several times, and we considered the prices very high. I might add that our opinion is based on our experience of what we can purchase steel spouting for, for grain elevator work.

Q. 69. I call your attention to some of the patents set up in the answer in this suit, and will ask you to glance at the drawings, and state whether you have seen apparatus of the type illustrated therein in use; and if so, about what time?

A. Edwards 366,468 of 1887. I have seen and actually have built a similar plant. The drawing represents a small suction dredge. [fol. 60] The suction pipe is raised and lowered by a tackle supported by a boom and mast. There is also shown a high pressure pipe line, following the suction line, and discharging at the end of the suction line, to be used for loosening the material to be sucked up by the dredge. There are also side lines to the boom or suction pipe, these being for moving the suction line in a circular direction.

Q. 70. Can the pressure pipe and the suction pipe be moved in any other direction besides a movement of the outer end from side to side?

By Mr. Hood: Objected to as leading.

A. The end of the suction pipe can be moved both vertically and horizontally. They both move together and are fastened together.

Q. 71. Is the boom fixed or movable?

A. The boom in the cut here shown is movable. The boom follows the suction pipe horizontally.

Q. 72. About when did you see and build the similar plant you referred to?

By Mr. Hood: Question objected to as relating to matter not set up in the answer.

A. About twenty years ago.

Q. 73. Can you produce a photograph or cut of it?

A. Yes. The identical cut is shown on page 49 of a book entitled, "Plans of Grain Elevators," published by the Grain Dealers under date of January, 1918.

By Mr. Hood: It is understood that the objection entered to Q. 72 shall apply to this subject-matter without repetition.

In view of the difficulty of completing the very extensive investigation considered necessary by defendants, it is stipulated that no objection will be made on the ground that evidence is adduced by [fol. 61] deposition prior to amendment to the answer in order to plead the particular matter in the deposition. This stipulation is made in order to avoid delay in the taking of the testimony.

The book referred to by the witness is marked for identification, "Defendants' Exhibit 15, Plans of Grain Elevators."

By Mr. Hood: It is agreed that objection to this exhibit, as irrelevant and immaterial, may be considered as entered, whenever the same is offered in evidence.

Q. 74. Can you produce some other photograph of your dredge?

A. I think I have in our files at the office some other photographs, but have been unable to find them.

Q. 75. Describe briefly the construction and operation of your dredge.

A. The dredge in question is practically the same as that shown in the patent, and operated in the same manner.

Q. 76. As I understand it, then, it comprised a floating structure having two pipes, a pressure and a suction pipe, arranged to move together, swinging about their inner ends as a pivot, so that the outer ends could move in arcs of circles, either horizontally, vertically, or in any other direction, these outer ends being supported from a pivoted boom, the latter being capable of swinging from side to side. Is that correct?

By Mr. Hood: Objected to as leading.

A. That is correct.

Q. 77. In your dredge, did the boom move in any other direction than that referred to in the previous question?

A. It did not.

Q. 78. That is, it was held at a substantially fixed angle in a [fol. 62] vertical plant, but could swing from side to side; is that correct?

A. That is correct; there is no occasion to have the boom move up from its horizontal position. It is simply used for raising the suction pipe and the pressure pipe up above the water level, which the dredge was floating in.

Q. 79. When you referred to horizontal position, you pointed to

the boom G of the patent; did you intend to imply an inclined position nearly horizontal or exactly horizontal?

A. In the dredges I built the boom was horizontal.

Q. 80. How long was your dredge used?

A. It was used, to the best of my knowledge, about seven or eight years.

Q. 81. Have you seen any other dredges, prior to 1907, in which a pipe was suspended from a boom in such manner that the pipe was in inclined position, but could be adjusted vertically to vary the angle in a vertical plane, and could also be swung from side to side by the boom to change the location of its outer end?

A. Yes, I have seen larger hydraulic suction dredges equipped with what would be the equivalent to a boom. The mast and boom are used as one, by inclining the mast, and guying it back to the back end of the boat. With these large dredges the suction pipe is moved around in a circular swing by cables fastened to either side of the suction pipe and then anchored to the shore or to a buoy at either side. The pulley line is brought back to a power winch on the dredge.

Q. 82. What becomes of the mud and water which is sucked up by dredges, such as those you have just described, including your dredge and the one shown in the Edwards patent?

A. In the dredge I built, the material after passing through the [fol. 63] suction pump was discharged into a series of wooden troughs, which were supported by piles or other means and laid on an incline, which gave sufficient fall for the water, so that the water would carry the sediment. The position of the pipes was changed so as to discharge the material where desired.

Q. 83. In cases like this, how is the last section of pipe or trough supported? I refer to the discharge end of the line.

A. It would be supported the same as the other, up above the fill line.

Q. 84. Do you recall any instances where the last section of pipe or trough was supported in any manner, except on piles?

A. The first section from the dredge was sometimes supported by a boom—this to span over a space of deep water, where pile supports could not be secured.

Q. 85. How is the last section or discharge pipe or trough moved so as to discharge the material where desired, as you have stated?

A. It is moved by hand.

Q. 86. Where the first section is supported by a boom to span deep water, is this section always at a fixed angle to the dredge?

A. Yes, it was a fixed angle to the dredge, but not always in the same angle to the discharge trough.

Q. 87. Suppose the material was flowing away from the dredge at a certain angle, and you wished to turn the dredge part way around; do I understand that the section supported by a boom being at a fixed angle would prevent such turning?

A. To a great extent it would, but it has its limits. The wood spouts would have to be adjusted to some extent to fit the new angle.

Q. 88. However, you could turn the dredge through a small angle?

[fol. 64] A. Yes, what you would call a small angle.

Q. 89. The next patent I hand you is McLennan, No. 371,343, of 1887.

A. I have seen apparatus of this kind, prior to the time I came to Chicago in 1905. In fact, that represents one of the oldest elevators I ever saw. McLennan was one of the pioneers.

Q. 90. Please identify, if you can, the structures of the remaining patents which I hand you.

A. Simpson 445,645 of 1891; I have seen apparatus of this kind in use, prior to 1905.

Robinson 524,984 of 1894: I have also seen apparatus of this type in use prior to 1905. The illustration shows and describes a distributing spout beneath the grain hopper and connected to the grain hopper. The spout is supported on a central standard, and is in two sections. The upper section will move an entire circle around the standard, and the lower section will move in an entire circle around the point where it connects with the upper circle, thus reaching all points within the greatest radius of the two sections. The illustration also shows a brace 18, designed to support the central portion of the spout.

Walsh 560,382 of 1896: I have not seen the apparatus in combination as illustrated in this patent, although I have seen derricks with gib booms used for various purposes, and have also seen spouts used for spouting coal or other like material into the boat.

Bird 582,598 of 1897: I have seen this identical device in use. To all intents and purposes it is the same as Robinson patent 524,984.

Bellinger 605,375 of 1898: I have previously described this patent, and I have seen the spout in use at Duluth.

Robinson 622,019 of 1899: This is the same as the other Ro'inson patent, except that it does not have an equal amount of flexibility. The lower section will not turn a complete circle, as it inter-[fol. 65] feres with the vertical standard. I have never seen equipment of that kind.

Clarke 718,092 of 1903: I have never seen any equipment of this kind. This spout is nothing more than a double telescope spout. In other words, there are two telescopes on the main spout instead of one, but otherwise similar to the Bellinger spout.

Q. 91. Were the coal spouts that you referred to in connection with the Walsh patent fixed at a permanent angle or capable of movement?

A. They were subject to movement on the outer end, the other end being fixed.

Q. 92. In how many directions could they move?

A. Up and down.

Q. 93. Who is the patentee Robinson to whom you have referred?

A. Robinson used to be an elevator builder. He now lives in Seattle.

Q. 94. Are you familiar with the Mayo spout?

A. Very familiar with it. I was with the Barnett-Record Company when the design of the Mayo spout was made, and had more or less to do with its design; but the patent was put in his name, as he was the chief engineer at the time—it must have been about 1903, or earlier. The Mayo spout is similar in action to the Robinson spout, patent No. 524,984, except the top section of the Mayo spot is supported by a circular track, and on the track a trolley fastened to the upper section of the spout, thus allowing the lower end of the spout free space and movement to reach all points within the greatest radius of the two sections.

Q. 95. About when did you see in use swivel grain spouts supported by braces 18 and 15, shown in the respective patents to Robinson 524,984, and Bird 582,598?

A. As I remember it, it was a year or two after the Mayo spout [fol. 66] was invented and placed in use—about 1904, I think. There was some litigation about these spouts.

Q. 96. In any case, are you sure that you saw apparatus substantially like these patents as early as 1905?

A. Yes, I did.

Q. 97. In apparatus such as the Robinson, Bird and Mayo, where does the grain come from before it reaches the hopper immediately above the swivel pipes?

A. Sometimes the grain comes out of the garner above, and sometimes these spouts have been used on the first floor for drawing grain out of storage bins. In both cases the grain is previously elevated to the top of the elevator, and in reaching its destination in the storage and shipping bins it passes through one or more spouts.

Q. 98. So that elevators thus equipped comprise a supporting structure projecting upwardly to a considerable height, and having in it means for raising the material to a suitable point in the height of the structure, means in the form of bins or receptacles for receiving the material and conducting it to the swivel pipes, the upper section of swivel pipe being supported or carried, at least in part, by a diagonal arm or brace, or else by a trolley, the diagonal arm in the case of the Robinson and Bird structures being suitably supported so as to oscillate or move in a plane which is nearly horizontal; is that correct?

By Mr. Hood: Objected to as leading.

A. That is correct.

Q. 99. And such apparatus has been in extensive use to your personal knowledge at least as early as 1905?

A. It was in use as early as 1905.

Q. 100. And in most elevators where the grain is loaded into boats, there are provided pipes extending downwardly from the side of the elevator and supported by horizontally moveable booms for directing [fol. 67] the outlet of the pipe to any convenient part of the boat within range of the apparatus?

By Mr. Hood: Objected to as leading.

A. Practically all elevators delivering grain to ships are thus equipped, and have been prior to 1905.

Q. 101. Do the ships move any while they are being thus loaded?

A. The ships do move up and down with the rise and fall of the water or tide.

Q. 102. Have you any specific instance in mind?

A. The greatest movement of any ships I know of is at St. Johns, N. B., where they have an extreme tide of 35 feet.

Q. 103. Aside from the tide, do such ships move any while being loaded?

A. Not while the grain is running, they don't intend to move the ship.

Q. 104. Is the settling of the ship appreciable in such cases?

A. When loading ships in the lake, the ships settle in the water as loaded—about a maximum of 12 or 14 feet.

Q. 105. During such settling and in the case of tides, are the discharge spouts adjusted any?

A. In case of the extreme tide, as mentioned, there is a vertical spout with a hopper at the top used for the inclined spout to discharge into; the inclined spout would be held in position by the boom and tackle on the elevator, while the vertical spout would be held by the ship's tackle and boom; and the vertical spout adjusted to take care of the movement by the tide and the settling of the vessel as it is loaded. In the lakes the spout is lowered to take care of the settling of the boat as it is being loaded.

Q. 106. Referring to "Defendants' Exhibit 15," the book of the [fol. 68] Grain Dealers Journal, I will ask you to explain how the marine leg or conveyor, shown on page XI, is swung outwardly?

A. The leg is pushed out with a device called a "leg pusher" operated by power. It is represented in the cut as an inclined member, with one end resting against the back end of the leg and the other supported in the building.

Q. 107. Please refer to page XVII, and state if you are the W. R. Sinks referred to therein as a joint inventor with R. H. Folwell of "an ingenious device" for raising forms, used in the erection of the Girard Point elevator.

A. I am the W. R. Sinks mentioned, and R. H. Folwell is the same Folwell previously mentioned in this deposition.

Q. 108. Please refer to the illustration in the upper right-hand portion of page XXI, and state about how long the loading apparatus shown therein, particularly the boom and spout arrangement, have been used.

A. Referring to the divided cable on the end of the spout, I don't remember where I first saw the device.

Q. 109. Under what conditions are the booms used, such as are shown at the bottom of page XXII and the top of page XXIII?

A. Ordinarily this type of boom support is used where there is not sufficient height above the boom to use a suspension member. The picture at the top of page XXII shows an installation of the Mayo type of spout.

Q. 110. State whether the concrete-distributing apparatus shown on page XXIV is typical of your practice before and after coming to Chicago, or whether it represents some special practice.

A. The arrangement of the boom as shown on the tower here is, in general, the same as used on buildings previously and since coming [fol. 69] to Chicago. The boom here shown is fastened onto the corner post of the tower, and is used in this instance for hoisting steel and such lumber as might be needed, and possibly like materials.

Q. 111. Does the boom remain at a fixed height throughout the work?

A. No, the boom is raised up from time to time to suit the height of the structure.

Q. 112. And was this your practice with similar towers and booms prior to 1905?

A. Yes, sir.

Q. 113. Did you increase the height of the tower as the work progressed?

A. It was my practice to raise the towers at three different times. This was done to avoid the hazard of having such a high tower standing with only guy supports.

Q. 114. Is this tower and boom, as illustrated in the book referred to and as used by you prior to 1905, of such a character that you could have hung a concrete chute from the boom, so that it would extend downwardly from some point on the tower if you had considered it desirable to discharge the concrete in this manner?

A. As a general thing, towers, such as illustrated and referred to, could not be used for attaching concrete spouts, as they were not built strong enough.

Q. 115. As I understand it, then, had you desired to use concrete spouts with your apparatus, it would have been necessary merely to have made the tower somewhat stronger; is that correct?

A. The tower would have had to have been made stronger, the amount of strength necessary depending on the length of the concrete chute which might be attached to it, also the length of the boom which might be used. Both would materially affect the design and strength of the tower.

[fol. 70] Q. 116. And any competent engineer could readily determine what additional strength would be necessary in such a case, could he not?

A. A competent engineer could determine the necessary strength to provide for.

Q. 117. Prior to 1905, had you ever seen towers of this general type carrying booms, the structure being designed sufficiently strongly to permit the booms to lift and place heavy stones and other heavy objects?

A. Yes, I have seen towers of that character.

Q. 118. I intended to have you answer Q. 110 with more particular reference to the concrete-distributing apparatus; will you kindly amplify your answer?

A. I did not build this particular tower or structure, but have built similar towers and structures prior to 1905. It is our general practice

to place the mixer or mixers at the bottom of the tower and allow them to discharge into a hopper hoist. This is hoisted to the top of the structure, and there discharged into a spout by means of a slide; and the spout discharges into another hopper, from which hopper the concrete is drawn into carts and distributed into the structure. The last hopper in some instances would be close to the tower, while in other instances it would set 20 or 25 feet away from the tower, and was supported on the movable form.

Adjourned until 2 p. m.

Met pursuant to adjournment.

Q. 119. Are you familiar with the elevator illustrated on page 14 and the top of page 15 of this Exhibit 15?

A. I am familiar with it, and have been in it. I saw it soon after coming to Chicago in 1905.

Q. 120. How are the spouts on the right-hand side of the elevator held in place, referring to page 14.

A. The car spouts referred to are held in place by horizontal supports on the side of the building.

[fol. 71] Q. 121. What are the curved extensions at the ends of the two spouts?

A. They are what is known in the elevator trade as bifurcated car-loading spouts, and are made of sheet steel and divided at the lower end into two sections, curving upward and outward. The extreme end is also hinged so that the ends will let down and clear the car. The lower end of the spout is also telescoped, so as to adjust the ends of the spouts to fit the varying size of the cars.

Q. 122. What are the spouts seen projecting to the left in the building shown on page 34?

A. The two upper spouts extend to a mill adjoining, and each is suspended from a catenary wire cable. The lower spouts are car-loading spouts.

Q. 123. Is there anything among the exhibits you have previously referred to which illustrates the catenary suspension shown on this sheet?

A. Exhibit 11, Barnett-Record Blue Prints, shows the catenary cable in detail. It is not the same building, but is typical.

Q. 124. What is shown on page 61 of this book?

A. A structural view and a finished view of the Weehawken elevator. On page 60 is a cross-sectional view of the same elevator. Directly above the bins is what is called the distributing floor, which in this plan elevation is shown as a universal or Mayo spout. On the left is the boat-tipping spout, with boom for supporting same.

Q. 126. What is the large spout intended for in the upper picture on page 124?

By Mr. Hood: Attention is called to the previous agreement that objections to the book, "Plans of Grain Elevators" will lie without repetition. Further objection is made to the reference to this par-

ticular portion of page 124, on the ground that on its face it illustrates [fol. 72] a structure produced subsequent to the patent in suit.

A. It has every appearance of being a cob spout, for conveying the cobs from the shelter to the boiler house.

Further objection is made, as it appears from the answer of the witness that he is not testifying from personal knowledge of this particular structure.

Q. 127. Did you ever see such cob spouts prior to 1907?

A. Yes, sir.

Q. 128. This is a fair illustration of such earlier apparatus, is it?

A. Yes, sir, a cob spout is nothing but a plain sheet iron spout, with sufficient incline to make the cobs run through by gravity.

Q. 129. You have referred to spouts for the distribution of grain, corn cobs, and coal in your personal experience. What other material have you seen being distributed through inclined pipes or chutes prior to 1907?

A. I have seen crushed stone, sand and iron ore.

Q. 130. You previously referred to coal chutes on docks; have you seen any other type of coal chute?

A. Yes, I have seen coal chutes in connection with coal elevators in stock piles, where the coal was elevated and spouted out through the side of the building into a stock pile, and into bins. The spout would be supported in similar manner to the spouts heretofore referred to as shipping spouts in connection with grain elevators.

Q. 131. Do you mean that the spout could swing in any direction and was suspended from a swinging boom?

A. Yes.

Q. 132. From your knowledge and experience gained in the dredging business, grain-distributing art, and concrete building art, what would you say with reference to the amount of ingenuity that would be required about 1907 or 1908 in supporting a pipe or chute from a [fol. 73] boom, so that it could swing back and forth through a considerable angle to distribute concrete first at one point and then at a different point, assuming that conditions arose that made such distribution desirable?

A. In my opinion it would take no ingenuity to spout the concrete, as all the principles used in spouting the grain could be used in spouting the concrete, and, in fact, are used to spout the concrete, and have been used since 1907 or 1908.

Q. 133. What was the first large concrete office building which came to your attention as one made entirely of reinforced concrete?

A. The first building of this character that I ever heard about was built about 1902 in Cincinnati, and known as the Ingalls building. I did not view this building during its construction, but did visit it some years after.

Q. 134. To what extent was this building known to the building trade about the time it was built?

A. It was understood in the trade, so far as I know, as being the first concrete office or store building ever built in this country.

Q. 135. Did it cause any particular comment?

A. Yes, it caused a great deal comment, as to whether it would be stable, and would withstand the weather, temperature, etc.

Q. 136. About when did reinforced structures of this character begin to be built quite generally?

A. The building of like concrete structures has increased annually ever since—to just what extent I am not able to say.

Q. 137. From your knowledge of the art, about what percentage of all the concrete structures built in the United States today are built by the use of high towers, from which chutes are supported in some manner, as compared with concrete-distributed in other ways?

[fol. 74] A. I have no way of determining the per cent, but it would be my judgment a very small per cent of the whole number of buildings built used high towers and concrete spouting equipment, of the kind you referred to. In making this estimate I have in mind taking into account all structures which have concrete in their construction.

Q. 138. Have you ever seen apparatus such as shown on page 280, upper half, of Exhibit 15?

A. Yes, sir, I have seen similar equipment, but not this identical one prior to 1905.

Q. 139. Are you familiar with the Gerber spouting illustrated in the advertisements at the back of this book?

A. Yes, I am familiar with it. These types of spouts have been used since 1905.

Q. 140. How does the apparatus in the right-hand cut operate?

A. It has a cable extending to the lower floor of the elevator. By pulling on this cable the end of the spout is raised up out of the funnel in the floor, permitting the spout to be turned around to another funnel.

Q. 141. Have you any records from which you can give the date when the two Ely Walker Dry Goods Companies' buildings were built in St. Louis?

A. Construction views illustrating these buildings are shown in a book called "Some Stewart Structures" on pages 42 to 45, inclusive, and under each of the construction pictures is given the dates on which the photographs were taken. The Mercantile House on Washington Avenue and St. Charles Street, between 15th and 16th Streets, was built between February 15, 1907, and August 1, 1907; the Warehouse building was located on Locust Street, immediately behind the Mercantile building above described, and was built between February 15, 1907, and August 1, 1907.

[fol. 75] By Mr. Hood: Objected to as immaterial, and as relating to a structure not pleaded.

By Mr. Jones: The book is submitted to Mr. Hood for his inspection. The buildings will be referred to later in connection with the date of building the American Theatre building. Mr. Hood will recall that when Herman Bankes testified as a witness for one of the plaintiffs, William H. Insley, about six years ago, he referred to one of the Ely Walker Buildings to help fix the date of invention of the apparatus he claimed to have used subsequently on the American Theatre building. Mr. Bankes may be called as a

witness later, and therefore reference is made to the Ely Walker buildings at this time.

By Mr. Hood: Counsel for defendants is asked to have this book available for inspection by counsel for plaintiff, if such inspection is called for.

Q. 142. Are you familiar with the placing of concrete under water?

A. I have seen it done, but I have never done it myself to any extent.

Q. 143. Please describe how it was done prior to 1907.

A. I recall one instance of seeing a contractor putting in the center pier of a swing bridge between Boston and Charleston. In this instance the vertical spout was suspended above the water line by a boom from a mast located in the center of the pier, and so arranged that the boom would swing the entire circle, and the spout was arranged on wheels, so that it could be run in and out from the boom to the extreme outside of the pier, and as it was so moved and in a circular direction also the concrete was deposited in the pipe, and the pipe maintained full of concrete up above the water line, [fol. 76] and as fast as it settled down to the water line it was filled up again above the water line. In this way the concrete reached the bottom of the pipe in mass, and as the pier was built up the lower end of the spout was raised up by telescope sections in the spout.

Q. 144. Was the concrete wet or dry in the pipe?

A. When placed in the top of the pipe it was quite dry; but when it reached the water level it became submerged, and the water would come in at the bottom and come up.

Q. 145. Have you ever seen the Chicago & Northwestern Railway's terminal elevator at 122nd Street and Calumet River, referred to in the first article in the book Exhibit 15?

A. I have seen the building.

By Mr. Hood: Objected to as immaterial, and as relating to matter not pleaded.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 146. You stated that you have just once made use of chutes for chuting concrete in building a grain elevator in conjunction with a tower, hoist, and hopper. How were the chutes supported in that equipment?

A. They were supported from a cable.

X Q. 147. And how was the cable supported?

A. One end was supported from the hoisting tower, and the other end from a smaller tower and the adjoining building.

X Q. 148. When was this apparatus used?

A. It has been used the last two years.

X Q. 149. Do you mean that the first and only time you used this apparatus was about two years ago, that is about 1918?

A. Yes, sir.

[fol. 77] X Q. 150. When did you first begin to erect structures composed in part or in whole of concrete?

A. The first all-concrete grain elevator I erected was in 1903.

X Q. 151. And during each year thereafter you erected a number of concrete structures, did you?

A. Yes, sir.

X Q. 152. And during your experience you have had occasion to make use of wet or sloppy concrete to a considerable extent, have you?

A. In the grain elevator construction we have always used what is known as "sloppy" concrete.

X Q. 153. And such use has resulted in the fabrication of satisfactory buildings?

A. Yes.

X Q. 154. You have compared the cost of chuting design for chuting concrete with chuting design for chuting grain; is the chuting for concrete of a heavier construction than that used for grain?

A. As a general thing, yes.

X Q. 155. Were you subpoenaed as a witness in this case?

A. No, sir.

X Q. 156. At whose request did you appear to testify?

A. At Mr. Jones request.

X Q. 157. Are you to be paid for your time?

A. No, sir, not that I know of.

X Q. 158. You spoke about some litigation relative to the Mayo spout; were you surprised at that litigation also?

A. I was.

Cross-examination closed.

[fol. 78] Redirect examination by Mr. Jones:

R. D. Q. 159. You have referred to the use of chutes for crushed stone, coal, and iron ore; would concrete chutes have to be of any heavier construction than such chutes?

A. The design is largely dependent on the amount of material you want to pass over at a given time. In mixing concrete the volume is fixed a more or less extent by the size of the mixer, which is generally a half yard or a yard, and it mixes a batch in about three-quarters of a minute, so that fixes to a large measure the capacity of a concrete spout. Spouts for other materials are gauged by the amount and volume of material you want to run through at a given time.

R. D. Q. 160. In other words, then, as I understand it, an experienced man would build his chutes of such weight of material and of such size as to properly convey and stand the wear and tear of the material he wished to slide through the chute or pipe; is that correct?

A. That is correct. The concrete material will cut out the steel spout very fast, while cobs or flaxseed would wear the spout very little, consequently a lighter material could be used.

R. D. Q. 161. And in building a hoisting tower, and in guying it, an experienced man would build it of light construction or heavy construction, depending on whether it was to be used merely for hoisting, or whether it was to be subjected to lateral stresses, caused by mounting a boom or other equipment on it, and would brace it and guy it according to the class of service to be expected of it; would he not?

By Mr. Hood: The question is objected to as leading and not proper redirect examination.

[fol. 79] By Mr. Jones: The question is based on Mr. Hood's X Q. 154 relating to chuting designs.

A. In building a concrete tower, the first thing to be determined is the ultimate distance or the length of the concrete spout will have to be. With this determined you can estimate the amount of concrete which will be in the spout from one end to the other at a given time, also the weight of the spout itself, and this will determine the dimensions of the tower and of the members of which the tower is made and the guy wires for the tower.

R. D. Q. 162. And having determined these points, what would an experienced man do next?

Last objection repeated.

A. It would be a simple matter to construct the tower and hang up the spouts.

R. D. Q. 163. And these factors could have been estimated and this construction work done as readily in 1905 as at the present time, if the problem were presented to a man experienced in the erection of towers and devices of this character?

A. I don't see that the date has any connection with it whatever.

R. D. Q. 164. Do I understand you to mean that you, or some other man skilled in the art, could have worked out this engineering problem as readily in 1905 as you could at the present time; is that correct?

A. That is correct.

Deposition closed.

[fol. 80] HENRY O. WEBB, a witness produced, sworn, and examined on behalf of defendants, in answer to interrogatories by Mr. Jones, deposes and testifies as follows:

Q. 1. State your name, age, residence and occupation.

A. Henry O. Webb; thirty-eight years; 5414 Potomac Avenue, Chicago, Illinois. I am a cement finisher.

Q. 2. Have you had any experience in the construction of reinforced concrete buildings?

A. Yes, sir.

Q. 3. Are you familiar with the method of distributing the concrete during the erection of the American Theatre & Hotel Building in St. Louis?

A. Yes, sir. We spouted with the iron chutes.

Q. 4. Describe a little more fully the distribution of the concrete, beginning with the mixer.

A. The concrete was mixed in a mixer, dumped into the skip, hoisted to the receiving hopper on the tower, and from there spouted onto the floor with iron chutes suspended from cables with blocks and falls, and also rested on horses.

Q. 5. Which part of the chutes rested on the horses?

A. The last sections of the chutes that deposited the concrete on the floor.

Q. 6. Where was the mixer?

A. I don't recollect whether it was on the first floor or the basement. It was naturally at the bottom of the tower.

Q. 7. What kind of a tower was used?

A. It was a wood tower, built out of timbers, the timbers of the uprights of the four corners having 2 x 8 ribbons and 2 x 8 cross braces fastened to the steel structure where possible, and where not possible to fasten them to the steel structure it was anchored with wire cables.

Q. 8. How did the concrete get from the skip into the receiving hopper?

A. The skip dumps. The skip is fastened with a trip and when [fol. 81] it gets to the right height the trip is dumped by a block fastened on to the slide. A skip is balanced on an axle at the bottom of the skip.

Q. 9. When the concrete was first distributed at the lower part of this building, where was the hopper?

A. Approximately 50 ft. above the floor.

Q. 10. Where was the hopper when the concreting reached the top of the building?

A. The hopper was about 15 or 20 ft. above the level of the roof.

Q. 11. What was the nature of your work during the time that this building was built?

A. I was with the Gilsonite Construction Company. I was foreman of the concrete work being spouted on the American Theatre & Hotel Building.

Q. 12. Who was responsible for the use of these iron chutes, which you say were used for distributing the concrete?

A. The superintendent of the job, Herman Banks (Bankus), was a fellow always of ideas of placing concrete with chutes and compressed air.

Q. 13. Did you know him before this work was done on the American Theatre Building?

A. I did, at the Gilsonite Construction Company's yards and stables.

Q. 14. I call your attention to a photograph of the St. Louis Republic February 16, 1908, page 3, "Defendants' Exhibit 1," and will ask if this is the building you have been referring to?

A. Yes, sir.

Q. 15. The upper part of this building seems to be built around a court. How was the concrete carried from one side of this court to the other?

A. With the iron chutes—carried from a cable with block and falls.

[fol. 82] Q. 16. About what was the diameter of these chutes?

A. About eight inches.

Q. 17. What did they look like in section?

A. Well, they were about 6 feet long.

Q. 18. I mean the shape of the cross-section.

A. On a slope.

Q. 19. You have referred to these members as chutes; do you mean that they were open like a coal chute?

A. No, sir; they were round cylinder, open on each end.

Q. 20. How were these pipes supported where you were pouring concrete on the same side of the building as the tower?

A. They were suspended a short distance from the tower with block and falls, a balance resting on horses of different heights.

Q. 21. About how often did you see the building during the time that the concrete was being placed?

A. When the false work was completed on one floor, we poured the concrete, which took from three to four days. We would be taken away to other jobs until such time as the other floors were ready for pouring again.

Q. 22. How many of the different floors did you see being poured?

A. From the trusses over the theater to the roof.

Q. 23. That is, you saw all the intervening floors; is that it?

A. Yes.

Q. 24. About how many floors were there in the hotel building?

A. About fourteen; I am not positive.

Q. 25. About how high was the theater portion, referring to the corresponding floors of the hotel portion?

A. I should say about six floors.

Q. 26. Will you make a rough sketch showing a plan of the build-[fol. 83] ing, giving the location of the tower, and also an elevation showing how the pipes were supported where they crossed the open court?

A. I have done so.

By Mr. Jones: The sketch is marked for identification "Defendants' Exhibit 13, Webb Sketch of American Theatre Building."

Q. 27. Describe the sketch briefly.

A. Sketch No. 1 is a plan; sketch No. 2 shows chutes suspended over a court by a cable and block and falls; and sketch No. 3 shows the chutes suspended in the court and zig-zagging to floors below carried in the court by block and fall suspended from the cable.

Q. 28. Referring to Fig. 2, what would you do when you wished to deposit the concrete a few feet away from the point where the lower end of the pipe ends in that figure?

A. We would extend our chutes further out.

Q. 29. What would you do if you wished to deposit concrete a few feet to one side of the end of the pipe?

A. Two fellows would pull the end of the chute around.

Q. 30. Then, as I understand it, the different sections of chute were flexibly connected so as to permit each of them to be moved through a certain angle with reference to its adjoining section; is that correct?

By Mr. Hood: Objected to as leading, and not justified by the previous testimony of the witness.

A. Each chute would permit you to move the end of it approximately an angle of about a foot or 14 inches in 6 feet.

Q. 31. And this flexibility is what permits the bend in the pipe shown in Fig. 3; is that correct?

A. That is, but not all in the two sections, as shown in Fig. [fol. 84] 3. That is the idea of the bend of the chutes you would get in going from a distance of about two floors.

Q. 32. Please add another figure—Fig. 4—showing the manner of connecting the adjusting ends of the pipes.

A. Fig. 4 shows the two chutes with the chains and the hooks for their connections.

Q. 34. About what time of the year was the concrete work done on this building?

A. The spring of the year—1906 or 1907, I am not positive.

Q. 35. By refreshing your recollection from "Defendants' Exhibit 1," what year would you saw it was?

A. I had it in my mind it was 1906 or 1907.

Q. 36. I hand you a photograph marked "A-B," accompanied by a second photograph, these photographs having been filed in court in opposition to a preliminary injunction motion last August, and will ask if you can tell anything about them? (Defendants' Exhibit 2.)

A. I recognize the chutes, tower, and also a man in picture A. It is located in St. Louis, corner of Seventh & Market Sts., the American Theatre Building. I also recognize on the other photograph the superintendent, Herman Banks, the left-hand man in the upper picture. I also recognize the lower photograph of a building under construction at St. Joe, Missouri,

Q. 38. Describe how the pipe was supported in photograph A.

A. It is supported with a cable with a block and fall attached to chute and cable; also the end of the chute supported on a horse.

Q. 39. Please indicate the block or pulley by red ink arrow in photograph A.

A. I have done so. It is indistinct. The end of the rope is tied around the chute about an inch below the arrow.

[fol. 85] Q. 40. Describe the support for the right-hand chute in photograph B.

A. The B photograph shows a block and fall fastened on to the right-hand chute, which leads out from the center of the tower, which chute is open on top.

Q. 41. Did you see the pipes or chutes as used on the roof during the work?

A. Yes, sir, photograph B showing the placing of the concrete on the roof, as indicated by the chutes.

Q. 42. What proportion of the concrete used in the erection of this building was distributed through pipes or chutes, as compared with other methods of distribution?

A. Practically all of the concrete was placed with the chutes.

Q. 43. What was the consistency of the concrete?

A. The concrete was made wet enough to flow through the chutes.

Q. 44. Was it universal practice prior to this time to use concrete as wet as this?

A. Not to my recollection.

Q. 45. What advantage, if any was there in using wet concrete where reinforcing bars were to be embedded in the concrete?

A. It would adhere more to the steel, of which dry concrete has more voids.

Q. 46. Who did the lathing of the American Theatre Building?

A. John A. Roebling Company.

Q. 47. Do you know of any objections ever having been raised to the use of wet concrete?

A. Yes, sir. At the Great Lakes Naval Training Station in the year of 1910, the government preached on dry concrete. I had some difficulty in getting to use the chutes, as Admiral Ross objected to the wet concrete.

[fol. 86] Q. 48. To what extent, generally speaking, have you used chutes for distributing concrete since your experience on the American Theatre Building?

A. Practically ever since the American Theatre was built I have followed nothing else but reinforced concrete; and on practically all the jobs we use the chutes.

Q. 49. What job are you working on at the present time?

A. A factory for Bunte Bros. Franklin Boulevard and Spaulding Avenue. The cost of the building is between \$2,000,000 and \$2,500,000.

Q. 50. How are you distributing concrete on this building?

A. We are chuting the concrete to receiving hoppers on the floor, suspended from cables, and from there we use buggies.

Q. 51. You mean, do you, that the chutes are suspended from a single inclined cable or a number of cables?

A. The cable for carrying the chutes runs over the head of the big tower, then over two other towers, a distance of about 275 feet. We have two lines of chutes. Also another cable running over the head of the big tower, then over one more, a distance of about 250 feet, which our chutes are strung to.

Q. 52. And after the concrete flows from these chutes to the receiving hoppers, it is then permitted to flow into individual buggies

and wheeled by the workmen to the forms, and dumped in; is that correct?

A. Yes, sir.

Q. 53. I show you another photograph, consisting of three views, dated August 14, 1908, August 29, 1908, and October 16, 1908, and will ask you if you can identify the building shown therein?

A. The photograph showing the three buildings, of different dates, I recognize as a job in St. Joe, Mo., the Tootle-Campbell Building

[fol. 87] Q. 54. Is this the same St. Joe Building that you referred to in connection with Defendants' Exhibit 2?

A. It is.

Q. 55. Describe the apparatus shown in these various photographs.

A. We distributed the concrete with chutes, also suspended from a cable with block and fall.

By Mr. Jones: The notary is requested to mark the sheet containing the three photographs as "Defendants' Exhibit 14, Photos of Tootle-Campbell Building—1908."

Q. 56. Were you personally employed on the Tootle-Campbell Building?

A. I was employed by the Gilsonite Construction Company.

Q. 57. Do you recognize any of the men in the photograph constituting part of Exhibit B?

A. Yes, sir. I recognize Victor Clarke, Perry Morton—that is about all I recognize distinctly. I know some of the others, but don't recall their names.

Q. 58. Where was the mixer located on this job?

A. In the basement.

Q. 59. Trace the movement of the concrete from the mixer to the forms.

A. The concrete was mixed and dumped into the skip, carried up through the tower to the receiving hopper, thence into the chutes, and distributed on the floor from the ends of the chutes. In Exhibit B you will notice, in the back of the group, horses we used for resting our chutes on when cables are not permitted to be used.

Q. 60. Was the hopper always at the same height throughout the progress of the work?

A. It was not, as the work progressed our receiving hopper was raised high enough to enable us to chute the concrete any place [fol. 88] on the floor, without using wheelbarrows.

Q. 61. Do you know the address of either of the two men you recognized in the photograph?

A. I do not.

Q. 62. If the chutes were extending from one side of the tower, how would you distribute concrete to the space on the other side of the tower?

A. The tower was in about the center of the building; the two cables were run from the tower to the opposite corners of the building. We would change our chute when through with one end to the other end of the building.

Q. 63. How was the hopper raised?

A. With a block and fall.

Q. 64. Do you recall the taking of the photograph, Exhibit 2, showing this building in St. Joseph?

A. Yes, sir. I was there. I recognize the Court House in the back.

Q. 65. Have you any photographs of your own showing either this St. Joseph building or the St. Louis building?

A. I did have. I don't know whether they are down in my mother's, or packed away in my trunk at home, as I have a bunch of my pictures of different jobs that I have been on, at my mother's.

Q. 66. Will you make a search for them, and if you find them let me know?

A. I will.

Q. 67. Prior to the time when you used chutes on the American Theater Building about 1907, and the Tootle-Campbell Building about 1908, had you ever seen chutes used for conveying concrete?

A. Yes, for a short distance of eight or ten feet.

Q. 68. Do you know R. H. Hughes?

[fol. 89] A. Yes, sir. I never met him on any of these jobs that I know of.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 69. Referring to photograph marked A, forming part of Defendants' Exhibit 2, there appears to be a grid or platform of I-beams under the wooden frame-work which supports the hopper; is that right?

A. That appears to be a bunch of loose I-beams.

X Q. 70. What supports the downwardly-flaring wooden legs which run up to a point under the hopper?

A. They are resting on the I-beams.

X Q. 71. And what do the I-beams rest on?

A. The I-beams rest on a column. They are riveted together at an intersecting point, where the four beams come together, or where two intersecting into the center of one beam or girder.

X Q. 72. Well, these loose I-beams that one can see so plainly in the photograph are not in permanent position, are they?

A. That I don't know.

X Q. 73. The wooden hopper supporting frame with legs that flare out toward the observer in this photograph rested on the steel frame of the building; is that right?

A. Yes, sir.

X Q. 74. And in Photograph B it appears quite plainly that the upper end of the cable, from which the open chute is suspended by the block and fall, is attached to a wooden cross-bar at the front side and near the top wooden hopper supporting frame; is that right?

A. It appears so in the picture.

X Q. 75. And you find the same construction, somewhat indistinctly [fol. 90] in Photograph A of Defendants' Exhibit 2, do you?

A. I don't see the cable attached there.

X Q. 76. Now, in Photograph B of Defendants' Exhibit 2, there are three chute lines leading off from a point just below the discharge mouth of the hopper, one of these lines being an open chute which leads straight out from the face of the tower, and the other two lines being enclosed pipe chutes, that is, pipes of circular cross-section leading off in opposite directions from the point below the hopper; is that right?

A. That is right.

X Q. 77. And these various chute lines were supported at their upper ends by the wooden frame, which you say rested on the steel framework of the building; is that right?

A. Yes, sir.

X Q. 78. I suppose that when one of these chutes was being used the others were disconnected; is that right?

A. In the iron chutes there was a gate to allow the concrete to flow only out of one chute at a time.

X Q. 79. So that these three chutes were all connected at their upper ends and a gate provided to direct the flow of concrete into one or the other of the chutes?

A. I don't say that the wooden chute is connected at the same time that the two iron chutes are.

X Q. 8. Which is the wooden chute?

A. The open chute is the wooden chute.

X Q. 81. And when the wooden chute was used, the upper ends of the iron chute were pushed to one side, so that the wooden chute could be placed in position to receive the concrete from the hopper?

A. It was.

Cross-examination closed.

[fol. 91] Redirect examination by Mr. Hood:

R. D. Q. 81a. Referring again to Photograph A and from your recollection of the apparatus, is it not a fact that the hopper is supported on the tower, and that the downwardly-flaring wooden legs that Mr. Hood has referred to simply aid in bracing the tower?

A. To my best recollection, the hopper was supported by a framework built from the tower and also from the floor.

R. D. Q. 82. The hopper appears to be supported on brackets comprising horizontal members and inclined members running inwardly towards the tower, does it not?

By Mr. Hood: Objected to as leading.

A. As I stated before, to my best recollection the hopper was supported from the floor and also the tower.

R. D. Q. 83. When the hopper was supported in one of the lower positions you have referred to, was it connected with the tower, so that the concrete could be dumped into it from the hoist bucket?

A. The receiving hopper sets up against the tower.

R. D. Q. 84. Would it be correct to state that the cables from which the chutes were hung were supported by the tower in such cases where they did not connect with some part of the steel structure?

By Mr. Hood: The question is objected to on the ground that this witness has not stated anywhere that the cable, from which the chutes were suspended, was not connected to the steel framework; on the contrary the witness has testified that the outer end of this supporting cable was anchored to the steel framework of the building.

[fol. 92] A. The cables that supported the chutes, or carried the chutes, were in all cases fastened to the tower where convenient to fasten, and run from there to the most convenient place to fasten to a steel column, girder, or anything substantial to hold the weight; and on a short chute in close quarters, where we were rushed with concrete, we would fasten the cable at the most convenient place we could find.

R. D. Q. 85. In other words, you adopted various expedients, depending on the character of the problem that had to be met; is that correct?

A. Well, I just stated briefly our way and the way we fastened the cables when spouting concrete.

Redirect examination closed.

Recross-examination by Mr. Hood:

R. X Q. 86. You have been asked about the hopper when it was supported in one of the lower positions. The hopper was supported in those lower positions in the same way as is illustrated in Photograph A of Defendants' Exhibit 2, was it not?

By Mr. Jones: Objected to, as the witness has given no testimony to that effect.

A. I would state from all appearances of the photograph that they are the same structures.

R. X Q. 87. In all positions of the hopper, it was partly supported by supporting legs which rested upon the forms for the floors of the building or upon the steel framework of the building; that is right, isn't it?

A. Upon the steel framework to my best knowledge. It was fastened on to the tower.

R. X Q. 88. That is, the hopper was supported in part by the tower by being fastened to it, and part of the hopper farthest out from the tower is also supported by the wooden legs or frame ex-[fol. 93] tended down and rested on a part of the steel framework of the building; that is right, isn't it?

A. That is the two supports, or the two legs, that hold up the outer part of the hopper, rest on the steel frame I-beams of the building, of which the legs are fastened onto the tower, with X-braces,

ribbons, and extra legs running out from the tower to the front part, or toward the front part, of the hopper.

R. X Q. 89. Now, on the sketches which you have made and which have been marked "Defendants' Exhibit 13," you didn't make any effort to make any indication of these supporting legs, did you?

A. No, sir, I did not, as I was not asked that question at that time. I was asked to show the lay out of the chutes and cables,—as to how they were strung across the court way, and also down to different floors.

Recross-examination closed.

Redirect examination by Mr. Jones:

R. D. Q. 90. Where you say "of which the legs" in your answer to R. X Q. 88, are you referring to the diagonal braces supporting the frame for the hopper on the tower?

By Mr. Hood: The question is objected to as assuming; there is no proper foundation in the testimony.

A. The arm marked in red ink with an X is a support for a platform for a man to stand on, or to work off, when connecting or disconnecting his chutes, and is built strong enough for a ribbon of 2 x 8 nailed across so as to help carry the chute.

R. D. Q. 91. And these diagonal braces X, of which there are two, also help to support the framework for the hopper through the [fol. 94] vertical supports Y, do they not?

A. The Y-brace referred to, in red ink in Photograph A, is not built for support for carrying the receiving hopper.

R. D. Q. 92. What do the two vertical posts Z support, and are they or are they not part of the tower?

A. They are supports that run up from the I-beam to the outer corners of the hopper on the outside, are supports for the hopper, and are fastened onto the tower with X-braces and ribbons, and also arms extended out from tower to the outside leg of the receiving hopper. W is an arm running out from the corner of the main tower to the outside leg of the receiving hopper.

R. D. Q. 93. As the result of this construction, is it correct to state that the hopper is supported in part by the tower and to some extent by the steel framework of the building?

A. It is.

Deposition closed.

Signature waived.

Adjourned until Thursday, December 30, 1920, at 10 a. m.

December 30, 1920.

Parties met pursuant to adjournment. Present, as before.

WILLIAM T. McCANN, a witness produced, sworn, and examined on behalf of defendants, deposes and testifies as follows in answer to interrogatories by Mr. Jones:

Q. 1. Please state your name, age, residence, and occupation.

A. William T. McCann; fifty-seven years; 652 W. Sixtieth St., [fol. 95] Chicago, Illinois. I am a carpenter with the Great Lakes Dredge and Dock Company.

Q. 2. How long have you been with this company?

A. About nineteen years or more.

Q. 3. In what part of the country have you worked during most of this period?

A. Chicago, Gary, Hammond, Sault St. Marie (Mich.), and Cleveland (Ohio).

Q. 4. I call your attention to Photograph Album No. 36, having the name Great Lakes Dredge & Dock Company on the cover, and will ask you to look at photograph 10,835 therein and state if you know anything about the work which the picture represents?

A. I do. Putting in a water intake.

Q. 5. Where was this intake?

A. Gary.

Q. 6. About when was this work done?

A. We started on the work in 1907.

Q. 7. Have you any way of determining that the year was 1907, aside from the date on the photograph?

A. The year of the panic, 1907,—the year that they got paid in script.

Q. 8. If you know what the apparatus is at the lefthand side of the picture, please describe it.

A. A concrete mixer. That is the machine erected for transferring concrete from mixers to forms by chutes.

Counsel for complainants objects to this line of testimony as relating to a structure and operations not pleaded in the answer, and it is understood that the objection may lie without repetition to all questions and answers relating thereto, subject, however, to previous stipulation relative to the taking of depositions prior to amending the answer.

[fol. 96] Q. 9. Where are chutes in the photographs?

A. The photograph don't show the chutes.

Q. 10. Explain why.

A. The machine was not working when the picture was taken.

Q. 11. Why wasn't it working?

A. Excavation was being done and concrete forms not built.

Q. 12. Was this machine ever used for transferring concrete from the mixers to the forms by chutes?

By Mr. Hood: It is suggested to counsel for defendants that the questions should be of less leading character.

By Mr. Jones: The question was based directly on the answer to Q. 8, stating that the machine was erected for this purpose.

A. The chutes carried the concrete from the mixer to the forms.

Q. 13. When did they do this?

A. I don't get that.

Q. 14. Please state the year in which they did this first.

A. In 1907.

Q. 15. About what part of the year would you say that this apparatus was first used in this manner?

A. In March.

Q. 16. What makes you think it was March?

A. We had labor troubles that year.

Q. 17. Do you know anything about the trestle shown in this photograph?

A. I do. I remember working on that trestle work on a Sunday. It was an emergency job.

Q. 18. Do you remember how long it took to finish the trestle or bridge structure?

[fol. 97] A. We completed it some time through the night—before Monday morning.

Q. 19. Do you remember why this was an emergency job, or anything else about it?

A. I can't recall.

Q. 20. What was the condition of the work on the far side of the bridge in the photograph at the time the picture was taken, presumably June 19, 1907, the date on the photograph?

A. That was the pumping station (witness indicates a building in the background). Concrete, probably three or four hundred feet, from the starting point of that building.

Q. 21. Explain a little more fully what you mean.

A. It is a water intake from a water slip of concrete construction.

Q. 22. How was this concrete put in place?

A. Concrete mixer and chutes.

Q. 23. Was the work you have just referred to done before or after the bridge was built?

A. Before.

Q. 24. How were the chutes supported?

A. One end was fastened to the mixer, and one end to the boom of some of the chutes. Some chutes were blocked by wooden trestles.

Q. 25. If the boom is shown in the photograph, please point to it.

A. The boom is attached to the mixer shown in the photograph.

Q. 26. How was this boom supported at its lower end?

A. It was supported by an eye-bolt and a clevis.

Q. 27. What was the purpose of this arrangement?

A. To move chutes to different positions for concrete construction.

[fol. 98] Q. 28. What did the eye-bolt and clevis have to do with moving the chutes?

A. So the boom could be swung.

Q. 29. What was the relation between the boom and the chutes, which you say were moved to different positions?

A. It was to give a loose end on the boom, so as to give freedom to swing the boom for moving the concrete chutes to different positions.

Q. 30. Then, as I understand this answer and your answer to Q. 24, these chutes you have referred to were fastened to the boom so as to swing when the boom would swing; is that correct?

A. Yes.

By Mr. Hood: Objection is made to leading questions and alleged interpretations of the testimony of the witness.

Q. 31. Who built the apparatus in which the mixer appears to be mounted?

A. I have.

Q. 32. Who else was connected with the building of this apparatus?

A. Mr. Cameron—I think his name is A. C. Cameron. We called him Sandy.

Q. 33. What is the box-like wooden affair projecting apparently from the side of the mixer structure toward the observer?

A. That is for conveying concrete from mixer to chute.

Q. 34. How was this done with this apparatus?

A. By placing at discharge of mixer.

Q. 35. How was it placed there?

A. It was fastened to the framework of the mixer at one end, the other end on blocking, and in different ways, as near as I can remember.

[fol. 99] Q. 36. Where was this other end with reference to the chute you have referred to?

A. That would be on the blocking, and in other ways of holding it in position.

Q. 37. Please trace the flow of the concrete from the mixer to its final position, that is, state through what it flows.

A. Concrete chutes.

Q. 38. Did it or did it not flow through what I have referred to as a box-like affair, which you have been describing?

A. Yes.

Q. 39. On what was the mixer supported?

A. It was supported on four railroad car wheels and axles.

Q. 40. Did it remain in the same position, or was it moved about?

A. It was moved about.

Q. 41. Before you saw this apparatus we have been talking about, had you ever seen a chute of any kind supported from a boom through which material would slide or flow?

A. I have around grain elevators.

Q. 42. Had you ever seen such apparatus before with concrete flowing through it?

A. I can't recall.

Q. 43. After you made this apparatus and saw it used, did you ever see any apparatus consisting of a chute hung from a boom, with concrete flowing through the chute?

A. I have.

Q. 44. Where?

A. In the Municipal Pier. I don't recall other places.

Q. 45. Have you ever seen any other apparatus intended for this purpose?

A. Yes, I saw other apparatus.

[fol. 100] Q. 46. I call your attention to an album, No. 37, Photograph 967, and will ask if you are familiar with the apparatus there shown?

By Mr. Hood: Objected to as relating to a structure and operations not pleaded.

A. I can't place that job.

Q. 47. I call your attention to Album 31, Photograph 14,582, and will ask if you have ever seen that or similar apparatus?

By Mr. Hood: Objected to as relating to a structure and operations not pleaded.

A. I saw similar apparatus—I don't know whether it would be the same as that.

Q. 48. Where did you see similar apparatus?

A. Here in the Chicago River.

Q. 49. Please note Album 29, Photograph 14,875, and state whether you have ever seen apparatus such as illustrated near the end of the sea wall.

By Mr. Hood: Objected to as relating to apparatus and operations not pleaded.

A. I am not positive that I know anything about that.

Q. 50. I show you a 1912 catalogue of the Great Lakes Dredge & Dock Company, marked "Copyright, 1912," and will ask if you have ever seen apparatus such as illustrated on pages 32 and 33 thereof?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. I never was on that work.

Q. 51 About how long after the bridge in picture 10,835 was built would you say that you were ready to continue the concrete work, which I understand had been carried up to or nearly to the bridge?

A. About a week or ten days, or it may have been longer.

[fol. 101] Q. 52. Do you know where the concrete chutes were at the time this picture was taken?

A. I don't remember just what part of the job they laid on, as they were not in use at the time the picture was taken.

Q. 53. Was there any particular secrecy about the use of this mixer, chutes, and boom during the time that this work was being carried on?

A. Not that I know of or can remember.

Q. 54. Do you recall about how long this apparatus was used on this job?

A. From along some time in March until October, as near as I can remember.

Q. 55. What can you say with reference to the volume of work done in the fall of 1907, as compared with the early part of the year?

A. I can't recall.

Q. 56. You referred to the fact that 1907 was the panic year. Did the panic have any effect on the amount of work which your company did during that year?

A. Not that I know of.

Q. 57. Did it have any effect on the number of men employed on the job?

A. Every job seemed to go along as weather permitted until completed.

Q. 58. After the jobs were completed, were there many new jobs?

A. I do not know.

Q. 59. Would you say there were as many men employed during the winter at the end of 1907 as there were during other winters?

A. There were not as many employed.

Q. 60. About when did you first see what might be called a [fol. 102] "tower" mixer, that is, one similar to what is shown in Photograph 14,582, comprising a tower in addition to the other parts?

Counsel for plaintiffs suggests that questions of this sort should be asked the witness, if at all, without at the same time showing him dated photographs. The question is objected to, in view of the display of the photograph, as leading.

A. About 1914, in Sault St. Marie, Michigan.

Q. 61. Was that apparatus on land or water?

A. Water.

Q. 62. Do you know Messrs. Fucik, Lutz, Lyden, and Murphy? If you do, please state who they are.

A. Mr. Lyden was president of the Great Lakes Dredge & Dock Company; he is dead now. Fucik is an estimating engineer, as near as I know, for the Company. I have known him in charge of work. Lutz is vice-president of the Company. Captain Murphy is general superintendent of construction, Chicago Division.

Q. 63. What men were familiar with the Gary pumping station intake job of Photograph 10,835, besides yourself and Mr. Cameron?

A. John R. Williams. There is a man named A. C. Andrews. I can't think of anybody else that you can locate now.

Q. 64. What is the small V-shaped inclined structure shown in this same photograph, having apparently ropes extending from it to the roof over the mixer?

A. Two bracings put on there.

Q. 65. What use was made of this bracing?

A. When we were transferring the mixer south of the trestle work.

Q. 66. What happened when you were making this transfer?
 [fol. 103] A. Instead of running concrete mixer on rails, we transferred it with a locomotive crane.

Q. 67. What did this have to do with the bracing?

A. To hold boom and clearance of slings to raise concrete mixer with locomotive crane.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 68. In this Photograph No. 10,835, on the under side, near the outer end of the part you have called a V-shaped bracing, there is a double pulley fall block; what was that for?

A. That ain't no fall block; it looks like a rope knotted together.

X Q. 69. You are right sure that there wasn't any double pulley block on that part of the structure, are you?

A. I am.

X Q. 70. And it is your recollection that this part that you have called a V-shaped brace was used to fasten the long boom to keep it from swinging when the mixer and its car was picked up bodily by the locomotive crane and transferred from the north side of the bridge to the south side?

A. Yes.

X Q. 71. Now, isn't it a fact, Mr. McCann, that the large boom on this mixer structure could only be swung up and down, and could not be swung from side to side?

A. No. It was built to swing, and it did swing.

X Q. 72. Did it swing up and down?

A. No, it was lowered and raised with block and tackle.

X Q. 73. You are quite sure that this larger wooden boom could be swung from side to side, are you?

A. Yes.

[fol. 104] X Q. 74. Just how was it supported on a mixer car, so that the side movement could be obtained?

A. By an eye-bolt and a clevis-shaped iron.

X Q. 75. The clevis was on the boom, was it?

A. Yes, sir.

X Q. 76. And the bolt was parallel with the ground and passed through the clevis on the boom; is that right?

A. Yes, that is right.

X Q. 77. And the eye-bolt was fastened in that heavy vertical post, against which the lower end of the boom appears to rest, didn't it?

A. As near as I can recollect.

X Q. 78. And the shank of the eye-bolt was parallel with the ground, wasn't it?

A. Yes.

X Q. 79. And the post was an upright post?

A. Yes.

X Q. 80. Now, what you call a clevis was a pair of wrought iron straps fastened to the sides of the lower end of the boom and projected a few inches beyond the lower end of the boom, each being provided with a hole through which the horizontal bolt was passed; that is right, isn't it?

By Mr. Jones: This line of questioning is objected to as too leading even for cross-examination; and it is suggested that the witness be first asked to describe this apparatus as fully as possible to lay the basis for further detailed questions.

A. No.

X Q. 81. What do you mean by a clevis?

A. An iron with a circular end on it—two straps with a circular end.

X Q. 82. Does the clevis show in the photograph?

A. Yes.

[fol. 105] X Q. 83. Is it that piece of iron at the lower end of the boom somewhat narrower, say, about one-half the width of the boom and projecting a few inches beyond the lower end of the boom?

A. Yes.

By Mr. Hood: Counsel for defendants is asked whether he expects to offer a copy of this Photograph 10,835 in evidence?

By Mr. Jones: Yes, copies of this and a number of other photographs are now being finished and will be marked for identification as soon as received.

X Q. 84. You have said something about this wooden trough, which appears to be located at the top end of the mixer car. Are the heavy square timbers which project outwardly and upwardly just beneath this trough-like structure parts of the trough structure?

A. Yes.

X Q. 85. Was this trough-like structure ever used in the position shown in the photograph?

A. No.

X Q. 86. Now, it is your recollection that this trough-like structure when to be used was shifted from the position shown in the photograph to a position at the boom side of the mixer car, so as to project straight out from that side, and that it was supported upon blocking so as to receive the discharge from the mixer. Is that right?

A. Yes.

X Q. 87. That was a pretty awkward sort of a structure to handle, wasn't it?

A. Not very.

X Q. 88. How was it shifted from the position shown in the photograph into position to receive concrete from the mixer?

[fol. 106] A. By hand.

X Q. 89. Just how was the chute section supported from the boom?

A. By block and tackle.

X Q. 90. This trough-like device shown in the photograph was not supported from the boom, was it?

A. No.

X Q. 91. And the trough section that you say was supported by the boom was also supported by blocking under it, wasn't it?

A. Yes.

X Q. 92. Do you remember just what sort of a connection was made between the block and tackle and the chute, which you say was supported by this block and tackle from the boom?

A. It rested on blocking.

X Q. 93. The intake line under construction, as shown in this photograph 10,835, was on the property of the Great Lakes Dredge & Dock Company, was it?

A. I don't know who owned that property that the intake went through. I understood that it belonged to the Steel Company.

X Q. 94. Was there a fence round the property?

A. No.

Cross-examination closed.

Redirect examination by Mr. Jones:

R. D. Q. 95. Did the vertical post, in which you say the eye-bolt was fastened, turn with the boom or was it stationary?

By Mr. Hood: Objected to as leading.

A. Stationary.

R. D. Q. 96. Explain a little more fully the arrangement of eye-bolt, horizontal bolt, and iron st-aps, as the result of which this boom [fol. 107] was able to swing from side to side in the manner which you have described.

A. Circular end iron strap passed through horizontal eye-bolt.

R. D. Q. 97. Can you make a rough pencil sketch of this scheme?

A. I am a very poor sketcher. (Witness makes sketch.)

The sketch is marked for identification "Defendants' Exhibit 16 McCann Sketch."

R. D. Q. 98. Before you rigged up this apparatus, had you ever seen a boom mounted so it could swing up and down and also swing sidewise?

A. Yes.

R. D. Q. 99. How many times?

A. I don't remember how many times—quite often.

R. D. Q. 100. Was this arrangement which you have just sketched materially different from the arrangement which you say you had quite often seen on other booms?

A. No.

R. D. Q. 101. Is your eye-sight poor, fair, or excellent would you say?

A. Fair.

R. D. Q. 102. After the mixer had been moved to the near side of the bridge shown in the picture referred to, was the boom ever swung from side to side with the chutes suspended from it in the manner that you have previously described?

A. Yes.

R. D. Q. 103. Was the mixer always moved by means of the crane?

A. No.

R. D. Q. 104. How was it moved?

A. On rails. It was built on a car.

Redirect examination closed.

[fol. 108] Recross-examination by Mr. Hood:

R. X Q. 106. Along the middle line of metal straps which are fastened to the wooden beam in photograph 10,835, there appear to be three projections or bumps; can you see those in the photograph?

(Witness uses magnifying glass.)

A. I can't see.

R. X Q. 107. What was the boom made of?

A. Two by twelve.

R. X Q. 108. Wooden timbers on edge, close together at their ends and bowed in the middle by three wooden cross pieces, upon which the main two by twelves were clamped by iron cross bolts; is that right?

A. Yes.

R. X Q. 109. And the narrow piece that appears to be bolted to the side of the two by twelve at the lower end was about 6 inches wide and 20 or 24 inches long, and of wrought iron; wasn't it?

A. Yes.

R. X Q. 110. About how thick was it?

A. I should judge half by three, and then the blacksmith worked it in the center.

R. X Q. 11. Don't you see the bolt head right down almost at the lower end of that metal plate?

A. No, I can't see it.

Recross-examination closed.

Deposition closed.

Adjourned until 2 p. m.

William T. McCann.

[fol. 109] ALEXANDER CAMERON, a witness produced, sworn, and examined on behalf of defendants, deposes and testifies as follows in answer to interrogatories by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Alexander Cameron; fifty-six years; 6437 Ellis Avenue,

Chicago, Illinois. I am general foreman or superintendent for the Great Lakes Dredge & Dock Company.

Q. 2. About how long have you been with this company?

A. I should say seventeen or eighteen years at the very least.

Q. 3. Did you have anything to do with the work on the intake at Gary, Ind.?

A. I was sent there in the fall of 1906—in November—to take charge of constructing that intake and coffer dam as well.

Q. 4. Did this work involve the placing of any concrete?

A. The pumping station must have taken about 2,500 yards.

Q. 5. Describe briefly the apparatus used in placing the concrete on this job.

A. A Smith mixer, built on a low flat car, with a platform on top leading to gondola cars, to be used for mixing concrete.

Q. 6. When did you first see this apparatus?

A. That was the first time that I had seen it.

Q. 7. What time was that?

A. That was along the latter part of November, 1906.

Q. 8. Explain more fully how the concrete was carried from the mixer to its final position.

[fol. 110] A. We discharged our concrete out of the mixer into a large mouthed hopper, which was fastened from the end of this hopper, chutes were attached to that running down into our coffer dam.

Q. 9. How were the chutes supported?

A. The chutes were fastened with ropes or wires—I am not quite clear—I should have said that the chutes were carried by a boom, attached to our car—that is, the concrete car—and the chutes were supported by tackles.

Q. 10. Can you produce a sketch illustrating this apparatus?

A. I can. Here is the kind of a tackle that carried and supported my chutes.

Q. 11. When did you make this sketch?

A. Last night.

Q. 12. Please put numbers on the different parts of the apparatus with red ink, and state what the numbers refer to—1, 2, 3, &c.

A. 1 is the mixer, 2 is a car, 3 is a boom, 4 is tackles, 5 is chutes, 6 is a coffer dam, 7 is a trestle, 8 is a hopper, 9 is tackle, 10 is a mast, 11 is a chute.

By Mr. Hood: The question is objected to as relating to a structure and operations not pleaded.

Q. 13. Please refer to the sketch, and explain again how the concrete gets from the mixer into the coffer dam.

A. We load our material into wheelbarrows and cars and wheel it to the mixer, where it is mixed up to its proper mixture and dumped out into those chutes 5 and 11, and placed in the bottom of the coffer dam 6.

Q. 14. How long do you keep this up?

A. Till we complete it at the pumping station.

Q. 15. Does the concrete simply flow out of the lower chute 11 into a single pile?

[fol. 111] A. Yes; it flows out of the bottom chute and poured into a pile, or poured into its place.

Q. 16. Am I correct in understanding from this that the chute remains in the same position until the pumping station job is completed?

A. No, we move it round as occasion requires.

Q. 17. Which one of the two chutes in the sketch do you move?

A. 11.

Q. 18. After you have moved the lower chute 11 until it has reached as far as possible, what do you do when you deposit the concrete at some more distant point?

A. Put on other chutes, similar to 11, or if the distance is shorter put on shorter chutes.

Q. 19. About how big was this coffer dam?

A. About 38 or 40 feet in width and about 100 feet in length.

Q. 20. How was the upper part of chute 5 connected with the mixer 1?

A. I am not quite clear. This hopper was set in and fastened on the car.

By Mr. Hood: It is understood that the objection previously entered to this line of questions may be considered to the entire line.

Q. 21. Where is the hopper on this sketch?

A. I didn't take really time to place it out as it would look on the car—I was in too much of a hurry.

Q. 22. Please draw it now to show roughly where it was.

A. I have done so to the best of my knowledge, and have marked it 12.

Q. 23. Did the chute 5 project at a fixed angle from the car, or could it be moved in any way?

A. We could move it up and down with our tackles, and also move it sideways.

[fol. 112] Q. 24. After you completed the coffer dam, what became of this concrete mixing and distributing apparatus?

A. We took that mixer around and placed it on the side of the open cut or big ditch where we were putting in a two 10-foot bore intake.

Q. 25. About when was it moved?

A. Some time about the last of March or first of April; to my best knowledge, in 1907.

Q. 26. Can you produce a photograph showing the apparatus you have referred to?

A. Yes, sir. (It is 10,835 of album 36.) I recognize the picture, but my sight is too poor to read the number.

It is stipulated that reproductions of this and other photographs of the Great Lakes Dredge & Dock Company may be used in evidence with the same force and effect as the originals, with the un-

derstanding that the originals will be produced at the hearing, and upon reasonable notice whenever called for by counsel for plaintiffs.

The notary is requested to mark the reproduction of this photograph "A" and to bind it in a binder marked "Defendants' Exhibit 17, Great Lakes Dredge & Dock Company's Photographs."

Q. 27. Explain how this apparatus shown in the photograph was used in the work on the cut or ditch.

A. A system of chutes running from the mixer down into the intake, similar as into coffer dam.

The notary is requested to mark the witness's pencil sketch "Defendants" Exhibit 18, Cameron Sketch."

Q. 28. Are you known by any other name than Alexander Cameron?

A. Sandy.

Q. 29. Do you recall any special incident in connection with the work shown in this photograph?

[fol. 113] A. There is nothing that I can think of.

Q. 30. Who built the bridge or trestle shown in the picture?

A. The Great Lakes Dredge & Dock Company.

Q. 31. Did you have anything to do with it?

A. I had charge of it and supervised the building.

Q. 32. Do you recall any of the circumstances in connection with the building of it?

A. Only that we were asked on Saturday if we could complete the trestles by the following Monday; and if we didn't we would be fined \$100 an hour for every hour that we held the concrete company—Lanquist & Illsley, I think it was.

Q. 33. Did you finish the work in time?

A. Yes, sir, we finished at 6 o'clock Monday morning.

Q. 34. Was this concrete-distributing apparatus used on both sides of the bridge in the picture?

A. Yes, sir, 300 feet west of the bridge, and 300 feet east of bridge to slip.

Q. 35. Where are the chutes shown in this photograph?

A. They are probably laying west of the bridge, as we are not in shape to pour concrete, as the picture will show.

Q. 36. What was necessary before you could pour?

A. Jet in sheeting underneath trestle, and erect forms for placing concrete.

Q. 37. About how long was this apparatus used on this job?

A. Five or six months, to the best of my knowledge.

Q. 38. About how long was it used on the first job you spoke of?

A. Between three and four months, to the best of my knowledge.

Q. 39. Before you saw this apparatus in the fall of 1906, had you [fol. 114] ever seen either chutes or pipes hung from a boom for the purpose of allowing material of some kind to slide down them?

A. No.

Q. 40. I was not referring to concrete particularly, but to any kind of material.

A. I saw chutes hanging on a grain elevator, that is all I saw.

Q. 41. Then this was the first time that you had seen chutes hung in this manner for the distribution of concrete; is that correct?

A. That is correct.

Q. 42. Have you ever seen apparatus of the kind shown in album 37, picture 967?

By Mr. Hood: Question objected to for previous reasons, and as relating to matter not pleaded, and it is understood that the same objection may be considered as entered without repetition to all apparatus of the Great Lakes Dredge & Dock Company, whether in the examination of this witness or any other witness.

A. Yes, sir. We used that for mixing concrete and placing concrete for concrete dock, in turning basin and slip used by the Inland Steel Company, of Gary, Ind.

By Mr. Jones: A reproduction of the photograph is marked "B" and included as part of Defendants' Exhibit 17.

Q. 43. Do you know who built this outfit?

A. The Great Lakes Dredging & Dock Company.

Q. 44. Did you have anything to do with it?

A. I had charge of it, and supervised the building of it.

Q. 45. Do you remember about when it was built?

A. The latter part of 1907 or the first part 1908.

Q. 46. How do you remember this general period of time?

[fol. 115] As it was the year of the panic, and we laid off quite a lot of men, and just kept a few to do necessary repairs around our fleet, which was laying in the harbor.

Q. 47. What did this have to do with building the apparatus?

A. We built it that winter.

Q. 48. Do you mean that you built it while you had just a few men around?

A. Just a few men during the winter, working when weather permitted.

Q. 49. Was business good or bad at the time for your company?

A. It was very bad.

Q. 50. Is this mixer on land or water?

A. On water. A scow 32 feet in width and 100 feet in length, I am pretty sure.

Q. 51. Describe the main elements of the apparatus on this scow.

A. Well, there were four or five bents set up on the scow, floor over, and hoppers built on top, for material mixed into concrete and poured out into concrete dock.

Q. 52. Did the concrete flow directly from the mixer to the dock?

A. Through a system of chutes.

Q. 53. How were the chutes supported?

A. A mast placed on front of mixer, supported on the scow, and a boom placed on this mast and hung by tackle and carried a chute.

Q. 54. Please mark on photograph B with red ink to indicate the mast, the boom, and the chute you have referred to.

A. The boom is not shown in the picture. I have marked the mast and the chute.

Q. 55. Please state what you call the projecting part which I have marked with an arrow in the photograph.

[fol. 116] A. That is the boom I have been talking about (witness using magnifying glass). I couldn't see it with my eyes. I now mark it "boom."

Q. 56. Who suggested the mounting of this mixer, boom and chute on the scow?

A. I recommended building a mixer like the one in the picture to Mr. T. C. Lutz, general superintendent for the Great Lakes Dredge & Dock Company.

Q. 57. About when did you conceive this idea?

A. About the middle of the summer of 1907, when I was informed by Mr. Lutz that I was to take charge of building the concrete dock around the turning basin and slip.

Q. 58. About how soon after it was built was it used?

A. About April 15th, or 16th, to the best of my knowledge, of 1908.

Q. 59. Was it successful or unsuccessful in operation?

A. Very successful.

Q. 60. How long was it used?

A. We completed all the work round the turning basin and slip at Gary, and was towed to the South Chicago Illinois Steel Company, and there done quite a lot of work, but I don't know how much, as I wasn't in charge of that job.

Q. 61. Has it ever been used since?

A. I am not clear.

Q. 62. I show you album 31, photograph 14,582, and will ask if you have ever seen apparatus of that character in use?

A. Yes; I had charge of and helped to erect that exhibit at the Iroquois Steel plant at South Chicago.

The notary is asked to mark the reproduction of this photograph "C," and include it as part of "Defendants' Exhibit 17."

[fol. 117] Q. 63. In this apparatus, where is the concrete mixed?

A. In a concrete mixer in the inside of a house. It cannot be seen, as it was closed up.

Q. 64. Where is the mixer with reference to the tower?

A. Right back of the tower.

Q. 65. How did the concrete get from the mixer to the forms?

A. It is dumped out of the mixer into a bucket, and conveyed up with a cable in a bucket, and dumped into a hopper which is fastened on the tower; and we have one 50-foot section of 12-inch pipe carried by two booms and fastened on the bottom of the hopper, and as occasion requires placing concrete in forms, we have 8-foot sections or 10-foot sections to take on or off.

Q. 66. How could you change the point of delivery of the lower end of the pipe?

A. By adding on a section 10 feet long, or taking it off, as occasion required.

Q. 67. Was there any other way to change the point of delivery?
A. By swinging booms and swinging pipe.

Q. 68. Was this apparatus successful?

A. Very successful.

Q. 69. I call your attention to album 32, photograph 14,724, and will ask if you are familiar with that apparatus?

A. It is similar to the one I have just described.

The reproduction of the photograph is marked D and made part of Exhibit 17.

Q. 70. Are you familiar with the apparatus of photograph 14,875 in album 29?

A. It is also one of our floating mixers—one of those mixers that I have just described for placing concrete on a dock.

[fol. 118] Q. 71. How long have you been using tower mixers of this floating type?

A. They have been in use since the building of those mixers at the Iroquois plant.

The reproduction of the photograph is marked E, and made part of Exhibit 17.

Q. 72. I call your attention to a catalogue of the Great Lakes Dredge & Dock Company, marked "Copyright 1912," and will ask if you are familiar with the concrete-distributing apparatus shown on pages 32 and 33?

A. Yes, I am familiar with those two mixers that I see there.

This catalogue is marked for identification "Defendants' Exhibit 19, 1912 Catalogue of Great Lakes Dredge & Dock Company."

Q. 73. Can you give the names of any parties who may have seen the mixer of Exhibit 17, print A, in operation?

A. John R. Williams, our manager; R. E. Rowley, Mr. Cruitz, chief inspector for the Gary Steel Company, and Stephen Cruitz, his son, inspector.

Q. 74. Do you know William McCann?

A. Yes, I know Mr. McCann; he was our carpenter boss, building the pumping station and the intakes at Gary, Ind.

Q. 75. Have you always been located in Chicago during your connection with your company?

A. No, I was sent to Toledo, Ohio, to help out on some work there, and afterwards was sent to Canada, Sault St. Marie, to help out on a cave-in on a dock there, and I afterwards was sent to Troy, N. Y., to build a steel dock there in the Hudson River.

Q. 76. Have you seen any of the concrete-distributing apparatus [fol. 119] of the Great Lakes Dredge & Dock Company, including a concrete chute hung from a boom, in any of these cities outside of Chicago and vicinity?

A. Yes, in Toledo, I saw one while they were building the C. H. & D. dock there.

Q. 77. Was this before or after the building of the Iroquois plant?

A. That was before, I think—I am pretty sure. I went to Toledo, I think, in 1910, I am not sure.

Q. 78. Was any special effort made to keep secret the use of the mixer you say you used on the intake job in the fall of 1906 and the spring of 1907?

A. No, sir.

Q. 79. Do you know Captain Murphy?

A. Yes, sir, he is superintendent of the Chicago division of the Great Lakes Dredge & Dock Company.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 80. You used the same mixer and chuting apparatus in building the intake line at Gary that you say you used during the preceding fall in connection with the coffer dam at Gary; did you?

A. Yes, sir.

X Q. 81. That is, you just took the same apparatus, comprising a mixer car, with its boom, and a hopper and chute that you had used in building the coffer dam, and put it on a track alongside of the ditch in which you built the intake?

A. Yes, sir, that is correct.

X Q. 82. The mixer in that apparatus discharged into an open top wooden trough that was built on some heavy timbers, and was wide at one end and narrow at the other; that is right, isn't it?

A. That is the right.

[fol. 120] X Q. 83. That is the trough that appears in photograph A of Defendants' Exhibit 17; isn't it?

A. That is the trough.

X Q. 84. When was this matter called to your attention for the purpose of testifying in this case?

A. I think it was Christmas Day, that would be Saturday afternoon.

X Q. 85. I suppose you had not given the matter much thought prior to that time?

A. Never had given it a thought.

X Q. 86. And you are depending on your memory and this photograph A for the precise details of construction; are you?

A. That is correct.

X Q. 87. Do you remember just exactly how the receiving end of the chute that you say was supported by a boom was arranged with relation to the delivery end of this wooden spout that appears in photograph A of Exhibit 17?

A. I cannot fully describe it. It is a 4 x 4 or a 6 x 6 and a lot of boards laid off on an angle; and this 6 x 6 was fastened on the edge of the car—I just forgot how.

X Q. 88. You are not able to give any more detailed description than you have given of the precise manner in which the receiving end of this boom-supported chute was supported, are you?

A. No, sir, I couldn't.

X Q. 89. And this sketch, Exhibit 18, was made by you yesterday from memory, was it?

A. Yes, sir.

X Q. 90. But you are not sure of all the details, are you?

A. Only that I used on this trestle to pour concrete down into the coffer dam.

X Q. 91. When you arrived at the Gary location in November, [fol. 121] 1906, had this apparatus for distributing concrete been built?

A. It was built.

X Q. 91a. And was it in operation?

A. No, sir.

X Q. 92. Do you know who built it?

A. The carpenter boss that was on the job.

X Q. 93. Was that Mr. McCann?

A. That was Mr. McCann.

X Q. 94. Do you think he would be more likely to remember the exact details of construction of this apparatus than you would?

A. I think so.

X Q. 95. What time in November, 1906, was it?

A. I can't say exactly, but it was along the last of November. I can get the dates if necessary.

X Q. 96. Do you think it was about Thanksgiving time?

A. Thereabouts, I am pretty sure it was about the last part of November.

X Q. 97. How soon after your arrival did you see this apparatus in use for chuting concrete through the chutes?

A. A week or ten days, I should think.

X Q. 98. Now in this apparatus pictured in Photograph 967, which is Photograph B of Defendants' Exhibit 17, the mixer was of that type which had a pivoted snout, which was mounted in the open end of the revolving drum, and this snout was swung so that its outer end pointed upwardly, and its inner end pointed downwardly, while the mixing was going on; is that right?

A. That is right.

X Q. 99. The rotatable mixing drum in that apparatus wasn't capable of being tilted, was it, to discharge its load, but instead the [fol. 122] load was discharged, after mixing had been accomplished, by swinging the snout downwardly, and this would swing the inner end of the snout up into position where it would catch the material carried upwardly by the rotation of the drum, and falling off the inside ribs of the drum into the inner end of the snout?

A. That is correct.

X Q. 100. So that the chute which was supported by the boom, and which you have marked in Defendants' Exhibit 17, Photograph B, had to be in line with this snout, so that when the outer end of the snout was swung down it discharged the mixed batch, the snout would lie in the receiving end of the chute?

A. That is correct.

X Q. 101. Then this chute, during delivery of concrete from the mixer, had to be in line with the snout, didn't it?

A. I don't remember.

X Q. 102. Now, in this photograph the inner or receiving end of the chute is quite close up to the mixer drum, isn't it?

A. Yes, sir.

X Q. 103. And the discharge spout sticks out from the drum about three or four feet, doesn't it?

A. That comes out about 18 inches beyond the mixer.

X Q. 104. What was the diameter of the mixing drum in that mixer?

A. I should judge about between four or five feet, I am not sure.

X Q. 105. Doesn't the discharge snout which is sticking out of the open end of this rotating drum in Photograph 3 appear to have an exposed length of somewhat more than half the diameter of the drum?

A. About 24 inches or 2 feet.

[fol. 123] X Q. 106. Now, in order to discharge the mixture, the delivery end of this snout will be swung down into the chute which was carried from the boom, wouldn't it?

A. Yes, sir.

Adjourned Dec. 30, 1920, to meet by agreement.

Chicago, February 3, 1921.

Parties met pursuant to adjournment. Present, as before.

ALEXANDER CAMERON, recalled for further examination, testifies as follows, in answer to questions by Mr. Jones:

Q. 107. I call your attention to three additional photographs, numbered, respectively, 85, 125, and 178, and will ask if you are familiar with the apparatus shown therein.

A. 85 shows a concrete mixer on trestle which we used in building coffer dam at the Gary, Ind., pumping station along in November or December, 1906. 125 is the same mixer used in building intake connecting to pumping station at Gary, Ind. 178 is the same mixer on the intake connecting to pumping station at Gary, Ind.

Q. 108. When did you first see these pictures?

A. This morning.

Q. 109. Please compare the apparatus of Photograph 178 with Photograph A of Defendants' Exhibit 17.

A. They are the same, only the chutes are not on Photograph A.

By Mr. Jones: The three photographs are marked Photographs K, L, and M, respectively, to be included as part of Defendants' Exhibit 17.

By Mr. Hood: Qs. 107, 108, and 109, and the three photographs marked K, L, and M are objected to on the ground that the subject-matter thereof has not been properly proven.

[fol. 124] Q. 110. How do you account for the fact that the apparatus of Photograph M does not appear to be the same in all respects as the apparatus of Photographs K and L?

By Mr. Hood: Objected to as leading.

A. They are the same mixers, but K—I am not clear that it has a boom on this particular exhibit.

Q. 111. Is a boom shown on Photograph L?

A. No, there is no boom shown.

Q. 112. How do you account for the absence of the boom?

A. As we moved this mixer from the west side of the pumping station around to the east side of the pumping station to start building intakes—concreting the intakes—and can't say if we had boom in place yet. That is about all I can say on it.

Q. 113. Where was the apparatus of Photograph K located with reference to the pumping station?

A. On the west side on trestle.

Q. 114. Where is the pumping station that you have referred to in Photograph L?

A. It is the building right opposite this (witness indicates stepped concrete wall).

Q. 115. Do you mean that the pumping station had been built at the time this picture was taken, presumably March 2, 1907, the date on the photograph?

A. The walls were all built up around the affair and practically completed.

Q. 116. About where would this concrete wall be in Photograph A, Exhibit 17?

A. West of trestle (witness indicates the building in the middle of the picture).

Q. 117. Where is that concrete wall with reference to the building?

A. On the east side, it is the near side of the wall.

[fol. 125] Q. 118. Then, how do you account for the fact that you don't see the roof of the building in Photograph L?

A. Because this structural iron had not been put up yet, as we had nothing to do with it. That was erected by the American Bridge Company.

Q. 119. Then, as I understand your answer to Q. 115, you do not mean that the pumping station had been completed when this picture was taken, but merely that the concrete foundation walls had been completed; is that correct?

A. That is correct.

Q. 120. You have previously testified that your sketch, Exhibit 18, including a boom, shows the apparatus used in November, 1906, on the coffer dam at Gary; what have you to say with reference to that apparatus as compared with the apparatus in Photographs K and L, Exhibit 17?

A. I might have made a mistake on this; it is a long while to remember, but I knew I had a boom and an apparatus like Exhibit 18 on the work.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 121. You are not sure that the mixer and chuting apparatus that you used in Gary in the fall or winter of 1906 in delivering the freshly mixed concrete to the coffer dam forms had a boom?

A. I am not clear on it.

X Q. 122. This Photograph K, which is a part of Defendants' Exhibit 17, pretty clearly indicates that there wasn't any boom on the apparatus on December 31, 1906, doesn't it?

A. Well, I can't answer that, because I don't see any there, I am not clear on it.

X Q. 123. This Photograph K shows the wooden trough or [fol. 126] spout about which you testified and which is shown in Photograph A, doesn't it?

A. Yes, that is the same trough. (Witness points to the wooden trough which lies between the two men in the upper left-hand corner of Photograph K.)

X Q. 124. In Photograph K, the upper or receiving end of the first metal chute has a chain bridle attached to it, hasn't it?

A. It looks like it, but I can't remember just how we had it fastened at that time.

X Q. 125. Even with these photographs before you, you find that you are not able to remember accurately the details of construction of that apparatus; that is right, isn't it?

A. I know that with those apparatuses we poured in a lot of concrete.

X Q. 126. Do you think that is an answer to my last question, Mr. Cameron?

A. I think that would be an appropriate answer.

X Q. 127. What has the fact of pouring an awful lot of concrete to do in answering my question as to whether or not you were able to remember the exact details of construction of this apparatus?

A. I didn't just quite study your question.

X Q. 128. I will ask you the question again. Even with these photographs A, K, L, and M before you, you find that you are not able to remember accurately the details of the construction of the apparatus which you say you used in delivering concrete to the forms for the coffer dam at Gary in the latter part of 1906; that is correct isn't it?

A. I can't remember the details.

X Q. 129. Referring to Photograph K, don't you think that this photograph indicates that the cable which passes through the block [fol. 127] is hooked into the chain bridle, the ends of which are hooked into eyes at the upper end of the first metal trough section, was connected to the house frame around the mixer, rather than being connected to a boom?

A. I can't remember.

X Q. 130. Was the first boom that you put on this apparatus the same boom that is shown in Photograph A?

A. Yes, sir, the same boom.

X Q. 131. Now, in Photograph A there seems to be two booms connected to the car which carries the mixer. Which one of these two was the first you put on?

A. As I remember it, we had to put the two on at the same time, one to carry the bell-mouthed wooden chute and one to carry the chutes; that is the best of my recollection.

X Q. 132. After you put these two booms on, did you use the apparatus without the booms?

A. No, after we once put them on we used them all along on the intake.

X Q. 133. Well, now, isn't it a fact that if there had been any booms on the apparatus on December 31, 1906, the lower ends of those booms would have shown in this Photograph K?

A. Yes, and I am in doubt whether they were on on this particular work or not.

X Q. 134. You intended in your sketch, Exhibit 18, to illustrate by the part marked 10 the upright arm in Photograph A, which is braced crosswise by the two inclined braces; is that right?

A. Yes, sir.

X Q. 135. There is nothing on this sketch, Exhibit 18, which corresponds to the little boom which we find in Photograph A, is there?

A. This little sketch is something I just drew up from remember-[fol. 128] ing back and recalling to my mind to the best of advantage what the mixer looked like. The sketch hasn't the little boom.

X Q. 136. The apparatus, as shown in Photograph K, is one in which the upper or receiving end of the first metal chute was tied back by the chain bridle and the cable to the mixer house, and the lower end of the first chute section was supported on the coffer dam bracing; that is right, isn't it?

A. That is right.

X Q. 137. In Photograph A the little boom attached to the mixer house frame wasn't capable of swinging from side to side, was it?

A. The little one was not.

X Q. 138. And in operation it was not swung up and down either, was it?

A. No, sir.

X Q. 139. What is your recollection of the use to which this little boom was placed—what was it for?

A. To hold up the mouth of this bell-mouth chute that we had connected on the mixer.

X Q. 140. You mean that heavy wooden trough or snout that is shown on Photograph A projecting out toward the observer?

A. Yes.

X Q. 141. That is the same wooden snout that we find in the upper left-hand corner of Photograph K between the legs of the two men?

A. As near as I can remember, it is.

X Q. 142. And it is your recollection, is it, that this little fixed boom, which I find in Photograph A, was used to support the outer end of that wooden trough?

A. To carry it from a tackle from the end of the boom to the front of the snout.

X Q. 143. You don't recall that this little boom was used for any other purpose, do you?

[fol. 129] A. No other purpose.

X Q. 144. Do you think that your recollection as to this detail is as accurate as it is on any other detail that you have testified about, do you?

A. I would say it was.

X Q. 145. The first metal chute section was suspended in some way from the larger of the two booms mounted on the mixer car in photograph A; is that right?

A. I can't recall how that was fastened.

X Q. 146. You don't recall just how the metal chute sections were supported, do you?

A. I know when this little boom was built, it was built to carry this bell-mouthed chute, and block and tackle was so arranged as to carry it.

X Q. 147. By "bell-mouthed chute," you mean the wooden trough that was placed to receive the discharge from the mixer and extended out at right angles from the mixer car?

A. Yes, sir.

X Q. 148. And that bell-mouthed chute was supported on the trestle work along side of the car?

A. Not on Exhibit A, but on this it is correct. (Witness points to photograph K.)

X Q. 149. Well, in photograph A I understand that the "bell-mouthed chute" is in an abnormal position for transportation and not in position to be used to receive concrete; is that right?

A. That is right.

X Q. 150. When the metal chutes in this apparatus were placed at an angle to the delivery line of the "bell-mouthed chute" those metal chutes were supported on horses or trestles, the cross bracing of the forms, weren't they?

A. In the coffer dam they were supported on the bracing and tied up with lines, wherever the occasion called for taking off a chute or putting it on.

[fol. 130] X Q. 151. When was the coffer dam completed?

A. The concrete work, to the best of my knowledge, along in March or April, I am not sure, but along in the spring of 1907, I can't say just when.

X Q. 152. When you moved a mixer car from the coffer dam site to the track alongside of the intake track, did they take the booms off the mixer car?

A. I can't remember.

X Q. 153. The fact is you are not at all sure that the booms were put on to the mixer car before the coffer dam was completed, are you?

A. I am not sure.

X Q. 154. There would be no reason to take these booms off in shifting the car from the coffer dam site to a position alongside the intake trench, would there?

A. It would be necessary to take off the bell-mouth chute or anything projecting on either side of the car that would interfere with running it along on the standard gauge railroad track, so that it would clear any railroad switch stands or anything that would be close to the tracks.

X Q. 155. At the time you put on the longer boom on the mixer car, you provided at the same time the upwardly projecting braced post, which I find in Photograph A and to which the boom block and tackle is attached; that is right, isn't it?

A. As I remember, we built the boom and mast and rigged up everything as you see it in Photograph A at the one time.

X Q. 156. You didn't take the mast down in order to run the mixer car from the coffer dam side to the intake side, did you?

A. No, there would be no occasion to.

X Q. 157. You don't find that mast in Photograph L, do you?

A. No, sir.

[fol. 131] X Q. 158. The mixer car in photograph L is right alongside the beginning of the intake, isn't it?

A. That is right.

X Q. 159. It is pretty certain, then, that there was no provision for any booms on the mixer car at the time the mixer car was brought to the position shown in Photograph L, isn't it?

A. It would look that way to me.

X Q. 160. Now, when you got to the position alongside of the intake line with your mixer and had occasion to swing the metal chutes to one side or the other, you found it necessary to support the lower end of the metal chute on some sort of a thick support, either a trestle or a part of the intake forms, or some of the bracing for the trench, in order to hold it in place, didn't you?

A. That answers to Exhibit K, and to Exhibit L, and we found it such hard work that we devised some other scheme, hence the boom.

X Q. 161. And after you got the booms in place, you still found it necessary when you swung the metal trough out of line of the wooden bell-mouthing chute to support the lower end of the metal trough on a trestle or to tie it to the bracing or intake forms, in order to hold it sidewise, didn't you?

A. Not necessarily, we could hold it with a guy line and carry it on our own boom.

X Q. 162. You stated the other day that this apparatus for distributing concrete had been built before you arrived at the location in November, 1906. I understand now that you are not at all sure that the booms were on the mixer car when you got there in November?

A. I am not at all sure.

X Q. 163. The fact is that if the booms have been on the mixer [fol. 132] car before March 2, 1907, the date of this Photograph

L, the mast for the big boom would show in the Photograph L, wouldn't it?

A. It would.

X Q. 164. And the fact that this Photograph L does not show a mast is pretty conclusive that the booms were not on the mixer car until after March 7, 1907; isn't that right?

A. It would look that way to me.

X Q. 165. Are you able to tell, either from memory or from Photograph K, how the upper end of the first metal chute was supported?

A. I can't recall now just how it was fastened, but it was so arranged that you could pick it up and carry it round to any particular point that we wanted to place concrete.

X Q. 166. At about how much of an angle did you find that you could swing this first metal chute?

A. We worked concrete about 30 feet sections at a time, and we would place chutes for concrete in any part of the sections.

X Q. 167. And when you completed one 30 ft. section, you would then move the mixer car to a new position about 30 ft. away?

A. Yes, sir.

X Q. 168. About how long were the metal chute sections?

A. About 14 or 16 feet to the best of my knowledge, so that four men could pick them up and carry them around easily.

X Q. 169. When you were pouring the concrete for the intake line, you found it necessary to tie two of these sections together, in order to make a chute long enough to get from the delivery end of the wooden bell-mouthed chute down to the intake forms, didn't you?

A. Yes, sir.

[fol. 133] X Q. 170. And you did that by nesting one chute in the other, overlapping them somewhat and tying them together?

A. Only seeing on the pictures, I can't recall how we got them there. They were connected together, and when we got down into the forms we ran chutes along on the side of the intake and would fill that side up to a certain height; then we moved to the other side of the intake, arranged our chutes, and poured our concrete to a regular height.

X Q. 171. In order to reach the extreme end of one of these 30 ft. sections of the intake, did you use one or two sections of the metal chute extending along parallel with the intake line?

A. When you get the 30 ft. section, that was in the pumping station.

X Q. 172. How long a section of the intake line did you pour with the mixer car standing in one place?

A. Our first sections, starting from the pumping station, were 125 ft.

X Q. 173. Do you mean that you poured this 125 ft. of intake line without moving the mixer car?

A. Setting up in the middle of that section we poured both ways.

X Q. 174. Well, you poured some of the first part of the intake line through a chute that extended straight out from the mixer car down

into the intake form, without any boom support for the chute, and that is shown in Photograph L, isn't it?

A. Yes.

Adjourned to Friday afternoon, Feb. 4, 1921.

Cross-examination by Mr. Hood continued:

X Q. 175. Referring to Defendants' Exhibit Photograph B of Exhibit 17, do you recall just what sort of a connection there was be [fol. 134] tween the mixer and the inner end of the chute carried by the boom?

A. It is so long ago that I cannot go ahead and tell you clearly what kind of a connection we had. We had some kind of a connection which I cannot describe just now to answer in placing concrete in one 30 ft. section of dock.

X Q. 176. Did you do all that placing with one chute that was carried by the boom, or did you use supplemental sections?

A. We had connected on this particular chute what you would call a kind of counterbalance. We would dump into the chute and we would chute into either ends of this form.

X Q. 177. That counterbalance that you have just referred to is not shown in Photograph Exhibit B, is it?

A. No, that is where we were on the concreting in the dock.

X Q. 178. The Photograph B shows the apparatus in the same condition, so far as the mixer and boom-supported chute are concerned, that it was the first time you used it in April or May, 1908, doesn't it?

A. Yes, that looks like the same chute, or the same kind of a chute that we put on when we built that rig to pour the concrete in that dock.

X Q. 179. As I understand it, you were continuously familiar with and working with the various concrete chuting devices about which you have testified, from November, 1906, and thereafter, until the date of the last produced apparatus about which you have testified in your direct examination; is that right?

A. Yes, sir, being in charge of the work and being there all the time I was very familiar with it.

X Q. 180. And you were constantly endeavoring to improve their operation, so as to make them more efficient?

[fol. 135] A. As conditions would come about—in different places under different conditions—we arranged to suit the different places.

X Q. 181. And on all these jobs you had constantly in mind a desire and effort to improve their construction and operation so as to increase their efficiency?

A. Yes, sir.

X Q. 182. And you exercised your best endeavors in that respect?

A. Yes, sir. I devoted all my attention to it, and worried considerably figuring out schemes.

Cross-examination closed.

Redirect examination by Mr. Jones:

R. D. Q. 183. Do you know Mr. A. C. Paterson, the photographer?

A. Yes, sir.

R. D. Q. 184. Did you see him taking any photographs at Gary?

A. Yes, sir.

R. D. Q. 185. About when?

A. The latter part of 1906, and the winter and summer of 1907.

R. D. Q. 186. You were asked in X Q. 138 regarding the manner of supporting the bell-mouth chute, and you answered with reference to Photographs A and K, of Exhibit 17; how is it supported in Photograph M?

A. It is supported by an A-frame.

R. D. Q. 187. About how many sections of chute did you use at the most with that apparatus?

A. Our chutes were about fourteen to sixteen feet, as I remember; the height we were setting up on the bank from the work was probably twenty feet, and we had enough sections to lead concrete down into our intakes—that would be about two or three sections, as near as I can recollect, to lead it down.

[fol. 136] By Mr. Hood: Attention is called to the fact that all this has already been inquired about in the direct examination of this witness.

R. D. Q. 188. I was not inquiring as to the number shown in that figure, but as to what was the greatest number that you ever used at one time?

A. Three or four, I would say.

R. D. Q. 189. In this photograph the first two sections are fastened together to make a single length or section. In your previous answer did you consider this as one or two lengths?

A. I would consider that as two lengths.

R. D. Q. 190. You have explained that the metal chutes of this apparatus were supported on horses, trestles, and cross-bracing when used in the coffer dam. How were they supported when used on the intake trench work?

By Mr. Hood: Objected to as already answered.

A. Part was carried by a boom to hold them up, and the fact that we had—on the intake would be load supported by bracing and leading off along the side of the intake.

R. D. Q. 191. What is the purpose of the rope which is hanging loosely from the end of the boom in Photograph M?

A. Swinging around to concrete on either end of section of intake.

R. D. Q. 192. What do you mean by "swinging around to concrete"?

A. Swinging round chute to either end of section of intake.

R. D. Q. 193. How did this rope swing the chute?

A. We raised our chute with tackle and swung it around and tied it and led it into our chute at either end of section.

[fol. 137] R. D. Q. 194. Can you describe a little more in detail what you did with this rope hanging loosely from the end of the boom, which resulted in swinging the boom?

A. The man pulled the boom and chute around to any particular place in this section that we wanted to concrete.

R. D. Q. 195. As I understand you, you mean the man pulled the rope which swung the boom which carried the chute; is that correct?

A. That is correct.

R. D. Q. 196. Do you appear anywhere in the catalogue, Exhibit 19?

A. Yes, sir, on page 78.

R. D. Q. 197. How much of the apparatus of Photograph M did you use in your first work on the coffer dam?

A. The new parts that I see here would be the boom, the A-frame, the mast, and the necessary tackles to hold up those particular parts.

R. D. Q. 198. In Photograph B of this same exhibit, what arrangement, if any, was there to prevent concrete discharging from the snout of the mixer from over-chuting the upper end of the chute when the latter was not exactly in line with the mixer outlet?

A. Standing at one side of that mixer there must be a man who regulates the dumping of that with a lever to let it out as slow as you want or as fast as you want.

R. D. Q. 199. When the chute was turned sidewise, would the concrete slide from the snout into the chute?

A. Not that I ever noticed, or if it would we would soon put a stop to it.

R. D. Q. 200. You must have misunderstood my question, as you have previously testified that the purpose of this chute was to make the concrete run down it.

[fol. 138] A. The lower chute—I understood the second chute which was hanging on the end of the first chute—a short chute.

R. D. Q. 201. Have you not testified that the chute marked "Chute" in Photograph B could be swung by a boom from side to side?

A. Yes, we could move that far enough to work a 30 ft. section of concrete, pouring a 30 ft. section at one time with the assistance of a counterbalance chute on this end leading to pour it at either side of the form or concrete dock (witness indicates with his finger and pencil a chute supported toward the middle of the chute).

R. D. Q. 202. Now, after this "chute" marked in the photograph had been swung to one side, as you have testified, and the snout lowered, would the snout discharge concrete into the chute or not?

A. I don't remember of it discharging any over the side of the chute.

R. D. Q. 203. Well, if it did not discharge over the side, where did it discharge?

A. Down the chute.

R. D. Q. 204. Then you misunderstood Q. 199, in stating that you would put a stop to it if it did discharge into the chute?

A. No, if it discharged over the side of the chute, that is the way I understood your question.

R. D. Q. 205. Describe a little more fully this counterbalanced chute you have been referring to, which you hung from the end of the main chute.

A. We took an ordinary piece of chute, 4 feet long, I would say, and we had a strap around the center of that chute leading to another fastening over the chute leading from the mixer, and when occasion called for it we dumped concrete on the back part of the [fol. 139] dock and, whenever we had occasion, poured on the front part of the dock, or to any part of the form that we had a mind to, just by the action of one man swinging this part.

R. D. Q. 206. And this was hung from one end of the main chute?

A. Yes, leading from the mixer.

R. D. Q. 207. Did you ever use an additional length of chute connected to this counterbalanced chute?

A. Not that I can recall in pouring a 30 ft. section in the dock, but in pouring a coffer dam setting right opposite the mixer in Photograph B.

R. D. Q. 208. Was this counterbalanced chute counterbalanced with anything other than its own weight?

A. No, sir.

Redirect examination closed.

Recross-examination by Mr. Hood:

R. X Q. 209. When did you first use the short four-foot counterbalanced extension of the apparatus shown in Photograph B?

A. In the latter part of April, 1907, as near as I can recall.

R. X Q. 210. In 1907 or 1908?

A. I was wrong on that—in 1908.

R. X Q. 211. You made that some time after you first put the apparatus shown in Photograph B into use in March or April, 1908, didn't you?

A. Yes, sir.

R. X Q. 212. You did not have that extension at the time you first put the apparatus into use, did you?

A. No, sir.

R. X Q. 213. During the operations at Gary in the fall of 1906 and during 1907 in connection with the blast furnace pumping station and the water tunnels which were connected with it, photographs were taken by Mr. Paterson to show progress of the work there every few days, were they not?

A. As near as I can recall; and at that time it was about every two weeks, I think.

By Mr. Jones: Counsel for defendants objects to the form of the questions on cross-examination, most of which put the words into the witness' mouth, instead of asking for his recollection of the facts.

By Mr. Hood: The objection comes too late, even if it were tenable. The witness is a man of intelligence and well able to take care of himself.

Recross-examination closed.

Re-direct examination by Jones:

R. D. Q. 214. You have previously testified that you made this apparatus of Photograph B in the latter part of 1907 or first part of 1908, and that it was used about the middle of April; what was it doing in the interval?

A. Lying in harbor; in the month of March we could not do anything—in the month of March we were building this rig and getting in shape to concrete.

R. D. Q. 215. What rig were you building in March?

A. Our men were working on different scows, and also working on this particular concrete mixer.

R. D. Q. 216. You mean, then, that you begin work on it the latter part of 1907, but did not complete it until March, 1908.

A. We commenced on that rig along in the fall of 1907. We had a very few men, and we kept them puttering around, and when it was bad weather we put them down in the hold of the scow, bracing up, strengthening, and reinforcing.

R. D. Q. 217. Then, the apparent delay, as I understand it, was [fol. 141] due to the small number of men and to the winter weather; is that correct?

By Mr. Hood: The question is objected to. Counsel for defendants can hardly complain relative to putting the words into witness' mouth.

By Mr. Jones: The witness has stated these facts, which are simply summarized in the question.

A. Yes, that is correct.

Deposition closed.

Signature waived.

Washington, D. C., January 14, 1921.

Met pursuant to agreement and subsequent notice.

Present: Cyrus N. Anderson, of Philadelphia, Pa., for plaintiffs; George Bayard Jones, of Chicago, for defendants.

Testimony taken before Francis S. Maguire, Notary Public, for the District of Columbia.

ARTHUR L. SMITH, a witness produced on behalf of defendants, being first duly sworn, testifies as follows in answer to interrogatories by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Arthur L. Smith; sixty-eight; 931 M St., N. W., Washington, D. C.; builder and contractor, Arthur L. Smith & Co.

Q. 2. Are you the Arthur L. Smith to whom a patent was issued February 8, 1910, No. 948,746, assigned to Concrete Appliances Company, a copy of which patent I show you?

A. Yes, sir.

Q. 3. Were you subpoenaed to appear in this case?

A. Yes, sir.

[fol. 142] Q. 4. If you recall the circumstances surrounding the making of the invention, identified in this patent, please describe them.

A. I have had in mind the application of spouting materials of different characters since 1882, and at that time used it in the form of handling grain on the Missouri Pacific R. R. Grain Elevator, South St. Louis, Mo., in 1882 and 1883. Afterwards in the construction of reinforced concrete I applied the spouting system on the Lynnhaven Hotel at Norfolk, Va., in 1906.

Q. 5. Please describe the apparatus you used in 1906.

A. 1906, in erecting the Lynnhaven Hotel, we started to distribute the concrete from the hopper of the tower which was of general use throughout the country by means of wheelbarrows. It occurred to me at this time that concrete could be handled by means of spouting. This matter I had discussed on several occasions with architects and engineers and they were of the opinion that in spouting the concrete that the gravel or rock, whichever may be used in the composite, would separate from the sand and cement, but I proved on this work to my own satisfaction that concrete could be distributed successfully by means of spouting.

Q. 6. Have you a photograph of any of the apparatus used on the Lynnhaven Hotel?

A. I did have photographs of the skeleton of the building which I recognize as this being a copy of the same as I had these photographs taken and in so doing I gave the position by which I wanted the photographer to take the picture from.

By Mr. Jones: The notary is requested to mark the photograph Defendants' Exhibit 19', Photograph of Lynnhaven Hotel.

It is stipulated that a reproduction may be used instead of the original photograph.

[fol. 143] Q. 7. How long have you had this particular photograph?

A. Since the fall of 1906.

Q. 8. And you have had it in your possession all this time until you loaned it to me?

A. Yes, sir.

Q. 9. I call your attention to a carbon copy of a sketch, the original of which, together with a reproduction of the photograph Exhibit 19, was filed in court last August in connection with a preliminary injunction motion in this suit, and will ask if this sketch is a fair representation of the main features of the apparatus you have just referred to.

A. Yes, sir.

The notary is asked to mark this sketch Defendants' Exhibit No. 20, Smith Sketch of Lynnhaven Hotel Apparatus.

Q. 10. Describe briefly this apparatus using the numbers on this sketch.

A. No. 1 is the tower; No. 2 is the bucket in which they hoist the concrete; No. 3 is a hopper which the concrete is dumped into; No. 4 would be a spout connected with the hopper; No. 5 is an additional extension spout; No. 6 would be an indication of a rearrangement of the spouting (referring to the dotted lines 6 and 7); 8 and 9 would be horses or trestles by which the spouts were supported and to be used movable to any position as may be desired; 10 would be a block and tackle by which we lifted the end of spout No. 1 to any position that we saw fit in spouting concrete.

Q. 11. You have stated that these various parts "would be," do you mean that they were actually in use as you have described them?

A. Yes.

Q. 12. How was the upper spout 4 connected to the hopper 3 so [fol. 144] that it would be lifted by the block and tackle?

A. That was secured to the hopper and made flexible by means of hooks.

Q. 13. What was the result of this flexibility?

A. For the purpose of raising or lowering the spout or for removing it.

Q. 14. Could this spout be moved only up and down?

A. No, it could be swung around also.

Q. 15. To about how much of an angle could it be swung?

A. At right angles to the hopper.

Q. 16. Do you mean by this at right angles on both sides or practically half a circle?

A. Describing half a circle.

Q. 17. Please trace the progress of the concrete from the time it is mixed to the time it reaches the forms, referring to the sketch.

A. The concrete in the first place is deposited in the mixer at the bottom of the tower, then discharged into a bucket within the tower, known as a dump bucket. The dump bucket carries the concrete, which is attached to a cable to the hopper in which the concrete is dumped and from there spouted to the position, as may be required.

Q. 18. When you wish to change the point at which the concrete is being deposited, what would you do?

A. We moved the spouts to various locations.

Q. 19. How did you move the upper spout?

A. By means of a block and tackle.

Q. 20. You mean by this that it was supported by a block and tackle while you swung it around?

A. Yes, sir.

Q. 21. How did you move the lower section of spout?

A. We had to move that with common labor. We picked up the horses and spouts and placed them in position as was required.

[fol. 145] Q. 22. How many sections of spout did you use?

A. It depended entirely on the distance we were spouting the concrete. Sometimes one, two or three, as may be required for the distance.

Q. 23. Were these two or three sections always arranged in a straight line?

A. Not always.

Q. 24. Were they ever arranged about as shown in the lower half of the sketch, Exhibit 20?

A. Yes, sir.

Q. 25. In other words, these chutes could be made to cover practically the entire area represented by the combined length of the chutes, is that it?

A. Yes.

Q. 26. How were the chutes made?

A. Just made of wooden spouting; they were rectangular because they were broader on the bottom than on the sides.

Q. 27. Were they open or closed spouts?

A. Open.

Q. 28. How do you fix the year 1906 for this work?

A. The building was being erected for the Jamestown Fair and was to be used as a hotel.

The notary is requested to note on the record that the sign in the photograph Exhibit 19' reads, "The Lynnhaven Modern Fireproof Hotel 200 Rooms 75 private baths, opens April 1, 1907."

Q. 29. Is any part of your apparatus shown in this photograph?

A. The head of the tower including the hopper and the frame of the tower from the ground up is all that is shown in this photograph.

Q. 30. Please refer to the hopper by some letter or figure.

[fol. 146] A. No. 2 would indicate the hopper and 3 the spout from the hopper.

Q. 31. What is the tower B and the tower in front of it?

A. The tower B was a brick hoist; tower A was used for conveying the concrete from the mixer at the ground level to the hopper.

Q. 32. On about how many floors were your apparatus used?

A. Probably about three floors. I think it was from the fourth to the seventh floors.

Q. 33. And was the apparatus successful?

A. Yes, sir.

Q. 34. What was used on the lower floors to distribute concrete?

A. Wheelbarrows.

Q. 35. What was the apparatus commonly used on other buildings about this time?

A. The concrete was mixed and carried up in buckets and deposited in the hopper and discharged from the hopper into wheelbarrows and there distributed on the work.

Q. 36. I call your attention to a Ransome Concrete Machinery Co. catalogue having the date 1906 on page 2, and will ask you if

you are familiar with the apparatus illustrated in the long cut facing page 42.

A. Yes, sir. It is a tower with a Ransome mixer and automatic dump bucket for the purpose of conveying the concrete to different elevations by means of a dump bucket to a hopper with a gate attachment for the purpose of loading wheelbarrows or whatever use it might be put to. This tower was used to quite an extent throughout the country at the time I conceived the idea of spouting.

Q. 37. In such cases what was done as the building became higher?

[fol. 147] A. The hopper was lifted to the several elevations as may be required for the distribution of the concrete, for example, the hopper was generally lifted from one story to another as the work progressed.

Q. 38. Was the tower of fixed height?

A. As a general thing, it was.

Q. 39. You mean to imply that there were some cases where the tower became higher as the building became higher?

A. Yes; it depends on the conditions, as the greater the height of the building sometimes we found it an advantage to carry the tower up part way and secure it to the building and then continue it up to greater height.

Q. 40. What was your practice with reference to the height of the hopper and tower in using your apparatus on the Lynnhaven Hotel?

A. We did this in this case of extending the tower after running a certain height in the building.

Q. 41. You mean you raised both the tower and the hopper as the work progressed?

A. Yes, sir.

Q. 42. What did you do with the block and tackle in such cases?

A. We raised that accordingly.

Q. 43. Your patent 948,746 shows and refers to a boom 15 at the top of the tower. About when did you conceive the combination of a boom for supporting a chute or pipe in conjunction with a concrete hoisting tower with a vertically adjustable hopper on it?

A. The boom was always a part of my thought in handling the spouting, but was never applied until I erected a tower and spouting combined used in St. Louis on the Coliseum.

Q. 44. At the time you built the Lynnhaven Hotel, had you ever seen booms used for any purpose?

[fol. 148] A. I had used them for many years for all different purposes, as they were commonly used for hoisting materials of all kinds, as well as spouts. The particular boom which I used on the St. Louis Coliseum I found more applicable for that particular job.

Q. 45. What can you say about the consistency of the concrete used on this Lynnhaven Hotel job?

A. I found it necessary to make the concrete more of a liquid form by means of spouting than by means of handling by wheelbarrow.

The notary is requested to mark the Ransome catalogue Defendants' Exhibit 21, Ransome Concrete Machinery Company 1906 Catalogue.

Q. 46. At the time of this work, had you ever applied for a patent?

A. I never had.

Q. 47. Who is E. Tatterson, whose name appears on the photograph, Exhibit 19?

A. He was the contractor of the Lynnhaven Hotel that employed me as his superintendent for the construction of this work.

Q. 48. Is he living?

A. No, sir.

Q. 49. Do you know T. A. Tatterson?

A. Yes, sir, he is the son of the deceased.

Q. 50. Did he have anything to do with this building?

A. He was my timekeeper on this job.

Q. 51. Do you know R. B. Preston, of Portsmouth, Va.?

A. He was the superintendent for the architects of this particular job.

Q. 52. Do you know Andrew J. Kerns who made an affidavit the 23rd of August, 1920, with reference to this Lynnhaven Hotel job?

[fol. 149] A. Yes, sir, I know him. He was employed during the first part of the work as an engineer.

Q. 53. What became of him later?

A. He was removed from the works, by the order of Mr. Tatterson.

Q. 54. I call your attention briefly to affidavits of J. S. Goldback, Roland Brinkley, W. T. Baker and W. N. Thornton, filed in court last summer or fall, stating in substance that the apparatus you describe was not used on this building. Can you account for their impressions in any way?

A. Mr. Brinkley was the bookkeeper of Mr. Tatterson and was located at all times in the general office of Mr. Tatterson and had nothing to do with the building and knew nothing of its construction and I don't ever remember seeing him on the work. Mr. Baker was a superintendent for Mr. Tatterson on the Fairfax Hotel and the Paul Greenwood Buildings during the time that I was erecting the Lynnhaven Hotel and had nothing to do with the reinforced concrete construction of the Lynnhaven Hotel, as I was employed by Mr. Tatterson in Washington to go to Norfolk and take full charge of this work, and to my certain recollection Mr. Baker had so much on his hands that it was not possible, neither was he supposed to have had anything to do with the Lynnhaven Hotel. I never remember seeing him on the work during the construction of the reinforced concrete, but once or twice as I was in full control of this work and there was no occasion for Mr. Baker to visit this work. As to Mr. Goldback he or his men installed the electric conduits on this building and had nothing to do with the reinforced concrete and was not familiar with the manner in which I was handling the reinforced concrete. As to Walter Thornton, he was of the firm of plumbers that had the contract for the plumbing on the Lynnhaven Hotel and was not familiar [fol. 150] with the construction of reinforced concrete or the manner in which I was handling this work. I never at any time conversed with Mr. Baker, or Mr. Brinkley, or Mr. Goldback or Mr. Thornton as to the apparatus in which I was then studing out for a patent.

Q. 55. How much of this building frame was of reinforced concrete?

conveyed into a lower spout with a hopper. From this hopper the concrete was spouted from the lower spout into the wood forms required for the construction of the building.

Q. 79. Did the hopper remain always at the same point on the tower?

A. No, it was adjustable.

Q. 80. How was it adjusted?

A. It was worked by means of a slide and block and fall which raised it to whatever elevation we saw fit.

Q. 81. Can you produce any additional photograph of this apparatus?

A. This photograph I have here is the only one I have.

[fol. 154] The notary is asked to mark this photograph Defendants' Exhibit 22, Smith Photograph of St. Louis Coliseum Apparatus.

It is stipulated that a reproduction may be used in place of the original.

Q. 82. How long have you had this picture?

A. Since the date shown on the photograph, August 27, 1908.

Q. 83. You mean you have had this in your files ever since?

A. Yes, sir.

Q. 84. Who is Eugene Taylor, whose name appears on the picture?

A. He is the photographer whom I employed.

Q. 85. How was your proposal to use this apparatus treated by the men on the work?

A. It was condemned generally.

Q. 86. How did it work after it was put into operation?

A. It was a complete success. I want to say that it was condemned generally by the labor organizations, as they saw it was a labor-saving proposition.

Q. 87. About how much of the concrete on the job was poured with your apparatus?

A. I would say 95 per cent.

Q. 88. What can you say with reference to the cost of the work and the time required?

A. It was a great saving in cost of labor and I would say material to some extent. I found the mixing of concrete by the spouting system there was a saving of material labor over that of handling it by hand, as there was no waste of material. It was a great advantage on the speeding up of the work generally as under this system you could handle concrete in one-half of the length of time that you would by any other system.

[fol. 155] Q. 89. An affidavit was filed in court last summer by one John S. Bronson of St. Louis, in which he quoted some prior testimony of his given when he was a witness on behalf of William H. Insley of Indianapolis in a Canadian patent suit entitled Concrete Appliances Company v. Rourke, 3287—1913, in which Bronson refers to certain concrete spouting work in St. Louis. Do you know this party?

A. Yes, sir. He was an agent for the Ransome concrete mixer, and we bought one or two mixers from him; one was used on this job. Other than that he had no experience in reinforced concrete and had nothing to do with the construction of the tower or concrete apparatus or the building, but asked my permission to rig himself out with overalls and jumper and work in among the men to try to gain experience.

Q. 90. Was the concrete used on the Coliseum of the same or different consistency from that used on the Lynnhaven Hotel?

A. The same, with the exception that where wheelbarrows were used on the Lynnhaven we spaded the concrete in order to get it into the forms and in and around the reinforced steel as we did not handle it with as much liquid from wheelbarrows as from the spouting. We found that we could not use concrete in wheelbarrows with the same amount of liquid as we could by means of spouting.

Q. 91. What effect, if any, did the use of steel bars in the concrete have on the amount of water used in the mixture?

A. It had a tendency to stop the flow—you could not get as homogeneous a mass with a drier concrete as a more liquid form. A liquid concrete finds its way in among the steel whereas a drier consistency would not.

Q. 92. Are there more reinforced concrete buildings built today [fol. 156] than the period you have referred to—1906-1908?

A. A very large percentage more, as it is more economical than the structural steel.

Q. 93. I call your attention to a carbon copy of your preliminary statement, a certified copy of the original of which was filed in court last summer, and will ask you to glance it over and state where you were during the progress of the interference referred to therein No. 30,533?

A. I was in the Philippine Islands.

Q. 94. Did you personally supervise the prosecution of your application and the interference or was it left to your attorney?

A. It was left to my attorney.

Q. 95. Do you recall what your attorney did to terminate the interference?

A. No, I do not. He got out the patents.

Q. 96. This interference involved two parties—Emtman and Callahan—besides yourself. Do you recall how the interference terminated as between these three parties?

A. I won it.

Q. 97. Did your attorney investigate any of your early work in this connection?

Objected to because apparently witness has no personal knowledge of what his attorney did.

A. He came on to Washington to see me in reference to it to get all the data and I gave him all the data. He afterwards told me he went to Norfolk and got all the data in order to lay claims for the patent.

By Mr. Anderson: Objection made to that portion of the answer which states what his attorney told him as being hearsay.

Adjourned until 1:30 p. m.

[fol. 157] Met pursuant to adjournment.

Present, same as before.

Q. 98. You have stated that you had a boom in mind at least as early as the date of the Norfolk job, in 1906. How was this boom to be mounted on the tower as you had it in mind at that time?

By Mr. Anderson: Question objected to as not calling for an actual construction but for an imaginary one.

A. On the corner of the tower in order to swing and manipulate the spouting.

Q. 99. How would the boom be arranged, i. e., how would it point?

A. It would point outwardly from the tower.

Q. 100. You mean horizontally or in an inclined position?

A. On an incline.

Q. 101. Had you seen booms mounted in this way before this date?

A. Many of them.

Q. 102. In view of this earlier conception, why did you mount the boom on the tower on the Coliseum job horizontally?

A. It was more applicable for the job.

Q. 103. In your original conception referred to was the boom to be fixed at its lower end or adjustable?

A. Fixed at the lower end and made adjustable to raise to different heights.

Q. 104. In your preliminary statement you stated that you made sketches of your device in July, 1906; have you any of these sketches left?

A. No, sir.

Q. 105. You also stated that you first explained the invention to [fol. 158] others in July, 1906. Do you recall any of the parties or circumstances relating to this disclosure?

A. No, sir.

Q. 106. You stated that the Lynnhaven Hotel apparatus included an upper spout secured to the hopper by means of hooks. Can you explain this arrangement a little more fully?

A. Well, there was a swivel proposition on the bottom of the hopper and then the spout was hooked to that swivel. It was necessary to have a swivel in order to swing the spout.

Q. 107. Referring to the photograph of Lynnhaven Hotel, Exhibit 19, was the block and tackle used in pouring the highest floor or roof, whichever you call it?

A. No.

Q. 108. Was it used on the next to the top floor?

A. I answered that question some time ago; it was used from the fourth to the seventh to the best of my recollection.

Q. 109. Why was it not used on the last one or two floors?

A. I did not need it. I had all the information I wanted up to that time.

Q. 110. On what specific apparatus are your patent drawings based?

A. Upon the—from its first conception.

Q. 111. I was referring more particularly to the actual drawings and not the claims.

A. The Coliseum Building.

Q. 112. I note that the boom is described in the patent but is not included in the claims. Do you recall why this is?

A. An oversight on the part of my attorney.

Q. 113. At the time you executed this application, had you any previous experience with patents?

[fol. 159] A. No, sir. This was the first patent I ever took out.

Q. 114. How do you distribute concrete in your work today?

A. It depends entirely on the character of the building. A large building we find it more profitable to use the spouting system. A small building we use an ordinary way of taking the concrete up by wheelbarrow and brick hoist.

Q. 115. Do you ever use carts filled from a hopper on a tower?

A. We do. In some cases, in some cases a wheelbarrow.

Q. 116. In your photograph Exhibit 22, the lower end of the first section of spout appears to be supported on some kind of a frame; how long was this support used?

A. That was only temporary.

Q. 117. Were the Coliseum chutes closed pipes or open spouts?

A. Open spouts.

Q. 118. Have you ever met Messrs. Emtman and Callahan involved in the interference?

A. No.

Direct examination closed.

Cross-examination by Mr. Anderson:

X Q. 119. What time in the year 1906 was the concrete distributing apparatus which you say you used in the construction of the Lynnhaven Hotel at Norfolk, Va., completed and put into use?

A. In the fall of the year.

X Q. 120. Would you say September, October or November, 1906?

A. I don't remember.

X Q. 121. Would you say it was prior to December, 1906?

[fol. 160] A. Yes.

X Q. 122. In the sketch, Exhibit No. 20, you show two spouts or troughs, designated respectively 4 and 5. What is your recollection as to whether a greater number of troughs were used in this work?

A. Not to exceed three spouts.

X Q. 123. Is it your recollection that you actually did use three?

A. In some cases I did.

X Q. 124. You mean in some cases on the Lynnhaven Hotel?

A. Yes, sir.

X Q. 125. You did not say anything about that, however, in the affidavit which you have previously given in this case and which was executed by you August 6, 1920, did you?

(Witness reads affidavit.)

A. Probably did not.

X Q. 126. Will you please indicate by the letter X the top floor of the Lynnhaven Hotel Building as shown in the photograph, Defendants' Exhibit 19?

A. I have done so.

X Q. 127. I have indicated what appears to be another floor as shown in this photograph by the letter Y. Will you please tell me what that is?

A. That is the roof slab.

X Q. 128. I notice that what appear to be columns which I have indicated by the reference letter Z extend a considerable distance above the part which you have said is the roof designated Y. Why are these parts extended so high above the part marked Y?

A. They were built for the support of the cornice which was a very heavy projection of terra cotta and also for the support of the parapet walls.

A. Our first sections, starting from the pumping station, were 125 [fol. 161] X Q. 129. What is the part which I have marked Y on this photograph Exhibit No. 19?

A. That is a part of the form work which encloses a line of girders, which is a part of the construction for the support of the terra cotta cornice.

X Q. 130. Do I understand that this spouting system of yours was employed in the distribution of the concrete on the top floor X?

A. No, it was not.

X Q. 131. Then this photograph does not show any part of any such spouting apparatus, does it?

A. I think it does.

X Q. 132. How could it in view of the fact that the photograph not only shows the top floor X, but also shows the roof Y and in view of the further fact that you have stated that the spouting was not used in the distribution of the concrete on the top floor X?

A. It was used on these floors from this part down (witness indicates the floor below X), but not on the upper floor, as it did not have fall enough to do any good.

X Q. 133. Well now, notwithstanding the fact that you did not use the spouting system in the distribution of the concrete on floor X, but last used it on the floor W, did you keep the falls or spouts in place all the time that you were laying the concrete on floor X?

A. No, sir; only the head of—just at the head or top—the mouth-piece of the hopper.

X Q. 134. By "mouthpiece" of the hopper you mean the part thereof which appears to be closed by the part marked "Bin Gate" of the cut of Exhibit 21, opposite page 42?

A. I do not. There was an attachment as a swivel outside of the hopper. A short piece of a spout. That was to attach the other spout.

[fol. 162] X Q. 135. Please take Exhibit No. 20 and indicate thereon the "mouthpiece" to which you refer.

A. As this is only a crude sketch, it is not indicated clearly how it was constructed.

X Q. 136. Well now, in addition to the trough 4, in the Lynnhaven Hotel construction, was there a supplemental short trough intermediate the trough 4 and the hopper 3?

A. A swivel attachment as you might call it, a short spout which is not indicated here clearly.

X Q. 137. You have described in two or three different places, first in your affidavit executed Aug. 6, 1920, and again today in your testimony, the manner of connection between the upper end of the trough 4 and the hopper 3. In your affidavit of Aug. 6, 1920, you state that the chute 4 was secured to the hopper at one end by a swivel bolt 6"; today for the first time you refer to the use of hooks combined in some way or other with a swivel, but not until a moment ago have you referred to an additional short spout or anything like it. Now, as a matter of fact, do you really remember how the connection was made, assuming that you did use spouts, between the upper end of the spout or chute 4 and the hopper 3?

A. I explained to you a few minutes ago that there was a swivel spout proposition on that and that explains the situation as far as I can see.

X Q. 138. Then the showing of the connection of the upper end of the chute 4 and the hopper No. 3 upon Defendants' No. 20 is incorrect, is it not?

A. I will say in reply to that that this sketch is only a crude drawing and it is not brought out in detail.

X Q. 139. Why was it that you did not mention this short swivel spout that you have just referred to under cross-examination at any previous time?

[fol. 163] A. I don't think it was ever asked of me to go into details minutely.

X Q. 140. But you were asked, were you not, to explain how the upper end of the chute 4 was connected to the hopper 3, this morning by Mr. Jones.

A. Yes.

X Q. 141. And you did not refer to the short swivel spout which you now refer to?

A. No, sir, not to my recollection.

X Q. 142. As I understand you if this photograph, Defendants' Exhibit No. 19' shows anything of your spouting system it is only the short swivel spout to which you have referred?

A. Yes, sir.

X Q. 143. Did you use the same kind of a hoist bucket for hoisting the concrete in the tower 1 or Exhibit No. 19' that is shown in full

lines at the bottom of the tower opposite page 42, Defendants' Exhibit No. 21?

A. Yes, also shown on page 42 of the same exhibit, 21.

X Q. 144. The position of this hoist bucket discharging the concrete into the concrete bin is shown in dotted lines at the upper end of the tower on the sheet opposite page 42 of Exhibit No. 21 (Defendants'), is it not?

A. Yes, that refers to the bucket only.

X Q. 145. Can you find this bucket shown in Defendants' Exhibit No. 19'?

A. In that case the bucket is at the bottom of the tower.

X Q. 146. And is now shown in the photograph?

A. The photograph is so blurred that you cannot see the position of the bucket.

X Q. 147. What part of the photograph do you refer to as being blurred?

A. From the top oof the roof slab down.

X Q. 148. In your testimony this morning in answer to Q. 10, and [fol. 164] also in your affidavit executed August 6, 1920, you refer to the part marked 2 in the photograph Exhibit No. 19' as the bucket; do you still think that the part 2 designates the bucket?

A. No, it indicates the hopper.

X Q. 149. And the part 3 in that case indicates the lower end of the hopper, does it not?

A. The lower end of the hopper and the swivel head.

X Q. 150. As a matter of fact, doesn't the reference numeral 3 in this exhibit indicate a part similar to or identical with the part marked "Bin Gate" on the drawing opposite page 42 of Defendants' Exhibit 21?

A. No. We did not use the same construction of the concrete bin as indicated on the opposite page 42. Our hopper was made of wood constructed according to my own design.

X Q. 151. Do you mean to say that the part designated by the reference numeral 3 in Exhibit 19' is the part to which you have heretofore referred to as the swivel short spout?

A. A swivel short spout and hopper combined all construted of wood. This bin which you have here is made of iron and construted by the Ransome people and was not much used at that time (Exhibit 21, onposite page 42).

X Q. 152. Please examine the photograph Exhibit 19' and state whether or not you can see the swivel connection which you have referred to between the part 3 and the part 2.

A. I can just see a slight part of it, the rest of it is hidden by the form work of the building.

X Q. 153. I can't see where any part of the connection between 3 and 2 is hidden by the from work of the building. Won't you please be a little more definite?

A. Don't you see how it passes out over that form work which I have marked N?

[fol. 165] X Q. 154. Yes, but the point which you have marked is below the connection between the part 3 and the part 2.

A. You can't scrutinize that in so much detail without drawing it out to larger size, as the photograph is not clear enough.

X Q. 155. I have indicated a part upon the drawing Exhibit 19' by the reference letter P. Please say what that part is.

A. I would say that is as near as I can make it out, the upper part of the hopper.

X Q. 156. Isn't it one of the braces for assisting in supporting the hopper?

A. It may be.

X Q. 157. Now as I understand you, you did not use this spouting apparatus of yours above floor W?

A. No.

X Q. 158. Why did you hang on to the short swivel spout all the time you were using the hopper for pouring the concrete for the floor X and for the roof Y?

A. There was no need of taking it off.

X Q. 159. When you say that this short swivel spout to which you have referred was retained in place during the time that you were pouring the concrete for floor X and roof Y, you are speaking from memory altogether, are you not?

A. As near as I can recollect.

X Q. 160. And you have no data of any kind to refresh your memory on that point, have you?

A. No, sir.

X Q. 161. And as a matter of fact the photograph as to this part of the alleged structure is too indistinct to furnish any information, is it not?

A. No, I would not say that.

X Q. 162. Do you see anything on this photograph that of itself in the photographs looks like a short swivel spouting?

[fol. 166] A. Yes.

X Q. 163. You say this in spite of the fact that you said a while ago that the photograph was too small and indistinct to show details?

A. It would be for the ordinary person not familiar with that class of work.

X Q. 164. In other work I take it that you are basing your testimony upon your recollection rather than what is disclosed in the photograph.

A. By refreshing my memory and looking at that it clears the way. A man might forget all about a thing after years but when the photograph is brought before him his memory is refreshed the same as a phonograph.

X Q. 165. That is what I am trying to say this photograph brings the matter of this building back to your mind and you are testifying from your recollection and not from what you see in the photograph.

A. I say not. I do see certain parts in it that I could not point out to you or anyone else, it is so small in the photograph.

X Q. 166. What kind of a gate did you have at the lower end of that hopper?

A. One of my own design. I don't have to tell you what kind of a gate I had on there, it was one of my own design.

X Q. 167. Well, have you any particular objection of telling me what kind of a gate you had there?

By Mr. Jones: The witness is advised that he need not disclose any other invention not involved in this controversy.

A. I don't care to go into it in detail. The gate opened and closed with a large blade and handle for a cut out.

X Q. 168. Was the gate pivoted as in Defendants' Exhibit No. 21, or was it a sliding gate operated by means of a hand operated lever? [fol. 167] A. I explained that to you a moment ago.

X Q. 169. I don't hardly think you did.

By Mr. Jones: Objection is made to this line of questioning relating to details which the witness has stated he does not care to disclose. It is also objected to as being outside of the scope of the direct examination and also as immaterial.

By Mr. Anderson: Counsel for plaintiffs is trying to ascertain just what is disclosed by this photograph No. 19'. The witness has given some two or three different descriptions of the disclosure and has admitted that the photograph is too small and indistinct to show the details of the structure to which he has been testifying.

A. I have no further answer to make.

X Q. 170. Is the gate which you used to control the discharge of the concrete from the hopper shown in the photograph Exhibit No. 19'?

A. I am under the impression that it is, but it is dim.

X Q. 171. Can you see it in the photograph?

A. I said that I was under the impression that it was, but it is dim.

X Q. 172. Where was that gate located?

A. Located at the discharge of the hopper.

X Q. 173. Was it located in between the hopper and the short swivel spouting to which you referred a while ago?

A. Yes, sir.

X Q. 174. And as I understand that gate was operated by a lever?

A. Yes, sir.

X Q. 175. Now if the part 3, shown in the photograph Exhibit No. 19', indicates the short swivel spouting and the part 2 indicates the hopper and the gate and the handle for operating the same is located between these two parts why wouldn't it be clearly shown in this [fol. 168] photograph, Exhibit 19'?

A. The photograph is not large enough, and furthermore it is partially covered by the form work.

X Q. 176. The truth is the gate and the lever for operating the same are not visible in this photograph, is not that so?

A. It might not be visible to you but in the construction of that spout I know just the location it is.

X Q. 177. Well, can you actually see it on the photograph?

A. Yes, but not sufficiently to point it out to you.

X Q. 178. In other words, you can see it but you can't point it out to anybody else?

A. As I told you it was too fine in detail to explain it, as a portion of it was hidden by the form work.

X Q. 179. Why didn't you use this chute distributing apparatus for laying the concrete on next to the top floor X?

A. It did not have fall enough. And I had gotten all the knowledge I wanted out of the apparatus.

X Q. 180. Did the hopper 2 occupy the same position as is shown in the photograph during all the time that it was used on the Lynnhaven Hotel building?

A. No.

X Q. 181. What other positions did it occupy?

A. It was placed in different altitudes to accommodate the flow for spouting.

X Q. 182. Would it have paid you to have moved it high enough up to spout the concrete for floor X, the top floor?

A. That was not taken into consideration. We concluded to just leave it where it was and finish up.

X Q. 183. As I understand you then the use of this apparatus on the Lynnhaven Hotel building was for experimental purposes?

[fol. 169] By Mr. Jones: Objected to as calling for a conclusion to be drawn by the court. The witness has stated the fact.

A. It was for the purpose of determining whether concrete could be spouted, successfully.

X Q. 184. This spouting apparatus could be seen by anyone who might be up on the building where the work was going on, either an employee or a visitor, could it not?

A. It could.

X Q. 185. Do you recall whether a chute or trough, other than those to which you have particularly referred, was used in distributing the concrete upon any part of the building a distance from the tower 1 and not in any way connected with tower 1?

A. There was a chute at the end of 5 occasionally to spout at a greater distance (indicating Exhibit 20). And in some cases wheelbarrows were used to convey the concrete at a greater distance.

X Q. 186. But you do not recall the use of a trough or chute other than 4 and 5 in Exhibit No. 20 and a third chute which you say was used at times in extension of trough 5?

A. No, with the exception of the mouth piece with the swivel to it.

X Q. 187. How long was Mr. Andrew J. Kerns employed on this building?

A. I could not say positively, but he was employed for a while with a few laborers excavating, and he was also used as a hoisting engineer on the sidewalk level for a while. Owing to his habits he was not employed steadily.

X Q. 188. Didn't he remain on the job until the concrete was all distributed or laid?

A. No.

[fol. 170] X Q. 189. And didn't he go along and work on the Vinery Building?

A. He worked on the Vinery Building.

X Q. 190. Are you sure that he was not employed on the Lynn haven Building during the entire period that the concrete was being distributed?

A. Yes, sir.

X Q. 191. How far up was this building when you went down and took charge as superintendent, I think you said you were?

A. The piles of the building were driven for the foundation ready to be cut off and ready to start the excavations.

X Q. 192. At the time you filed your application for patent 948,746, dated February 8, 1910, on February 23, 1909, you made an affidavit, did you not, that the invention shown therein had not been in public use in this country for more than two years?

A. I don't remember.

By Mr. Jones: If plaintiffs' counsel has a copy of the affidavit he is requested to show it to the witness to remind him of the details.

X Q. 193. It is customary that such statements or averments appear in the affidavit filed with an application for patent. Assuming that such a statement was sworn to by you in the affidavit in support of your application for your patent, was the statement true?

A. I could not say. It is not clear to my mind.

By Mr. Jones: The question is a very objectionable one as if the witness signed the usual affidavit to this effect he obviously believed it to be true at the time as he understood it. It would be only fair to remind the witness that the affidavit states in substance that the [fol. 171] applicant in such cases believes that such and such things are the fact and does not state the facts more positively.

X Q. 194. How did the hopper and the short swivel spouting, which you say were used by you on the Lynnhaven Hotel building in Norfolk, compare with the corresponding parts shown in your patent No. 948,746?

A. There was no comparison between the two.

X Q. 195. Who were some of the people who worked under you on this Lynnhaven Hotel building?

A. I have no recollection as I had my son there, who has passed out since, I had also another young man who had charge of the concrete, he has passed out also, some five or six years *years* ago. I can't recall any of the names of the other men whom I had with me there in the construction work.

X Q. 196. As I understand you, you were superintendent for Mr. Tatterson for that particular building only?

A. Yes, and the Vinery Building.

X Q. 197. And also, as I understand it, Mr. Baker was general superintendent for Mr. Tatterson?

A. Not on this particular job.

X Q. 198. Do you mean that he was not general superintendent for Mr. Tatterson? Wasn't that his title?

A. Not that I knew of. Previous to my going down there he had been Mr. Tatterson's general superintendent but Mr. Tatterson came to Washington and employed me and gave me full control of

this work without any interference, and during the construction of this work Mr. Baker was in charge of two jobs, the Fairfax Hotel and the Paul Greenwood office building which occupied all his time, and Mr. Tatterson put on two other superintendents on other work, so that was the situation.

X Q. 199. According to your recollection, how often did Mr. Baker visit the Lynnhaven Hotel building as it was being constructed under your superintendency?

[fol. 172] A. To my recollection he was never on the building over twice during the whole construction of the reinforcement, and that was by invitation of myself as a friendly visit, not in connection with the work.

X Q. 200. And about how many months was that?

A. About three and one-half months.

X Q. 201. And I understood you to say this morning that you never saw Mr. Roland Brinkley on the work?

A. Only to consult me in the office.

X Q. 202. You never saw him up on the building at all?

A. Never on the building.

X Q. 203. And how about Mr. Walter N. Thornton; did you ever see him on the building during the construction of the concrete portion of the building?

A. Many times, as he had the contract of the plumbing.

X Q. 204. And how about Mr. J. Samuel Goldback, did you ever see him on the building during the time that the concrete portion thereof was being constructed?

A. He was there occasionally to consult with his foreman in running the conduit work for the electric lighting.

X Q. 205. From the time that you began using this spouting system for distributing the concrete on the fourth floor to the seventh floor marked W on Exhibit No. 19', was it continuously in use for the distribution of concrete on these floors?

A. No, sir.

X Q. 206. What I tried to ask, was all of the concrete on those floors four to seven inclusive distributed by the spouting system?

A. No, sir.

X Q. 207. Do you mean that you used this spouting system for a little while on each floor and then take it down and get rid of it?

A. No, there were intervals when we used wheelbarrows where it [fol. 173] was not necessary to use the spouting, as the distances were greater or sometimes shorter, the shorter distance we used wheelbarrows for distribution owing to the shape of the building. The building was an L-shaped building and we could not use the spouting at all times as it was not complete a layout as that of the Coliseum building, but at the same time proved its purpose.

X Q. 208. What you mean is this, that in case the place where you wanted to put the concrete was further away than the combined length of the troughs you wheeled from the ends of the trough to the place where you wanted to put the concrete?

A. Yes, and when the distances were less than or shorter than the

length of the first trough 4 and we wanted to deposit the concrete under the chute, we used wheelbarrows.

X Q. 209. Then as I understand you even while you were using the wheelbarrows as you have just described, the spouting remained in place, that is, was not taken down?

A. Not altogether, not until we go higher up. These, chute 5, were taken away as the work was filled in the spouts were removed from time to time.

X Q. 210. Do you mean by that, that you started by discharging the concrete either from chute 5 or from the third chute not shown and that when you had finished the work as far as you could with that particular chute you removed and then began discharging from the next chute closer toward the tower?

A. Yes, sir.

X Q. 211. At such times as Mr. Thornton, Mr. Goldback and others may have gone up on the building, there is no reason why they should not have seen this spouting, was there?

[fol. 174] A. If they were sufficiently familiar with concrete work and took an interest in it they could see it.

X Q. 212. It was there for them to see?

A. Yes, sir.

X Q. 213. Except in the case of those persons which have been mentioned here today, do you recall a single other person who either worked on the building or visited on the building who might have seen this spouting of yours at that time?

A. The superintendent for the architects Mr. Preston and Mr. Tatterson's son were the only two that I remember.

X Q. 214. By the way, wasn't Mr. Tatterson's son at college at that time?

A. He was at college part of the time and then he came home and started to work for me as timekeeper.

X Q. 215. When was that, in the summer of 1907?

A. In the summer of 1906 and 1907.

X Q. 216. You have previously today referred to Mr. John S. Bronson; do you recall any conversation you had with him in regard to the boom construction at the top of the tower employed in distributing the concrete at the Coliseum Building in St. Louis?

A. No, he never conversed with me on that, he was not a practical man he was merely an agent for concrete mixers.

X Q. 217. Wouldn't he as agent for such mixers have been much interested in any improved means for distributing concrete?

A. Well, I naturally would suppose he would be interested in such things, but his purpose on the work was merely to become familiar with how to handle concrete.

X Q. 218. As a matter of fact, did he ever show any displeasure to you or annoyance because you had filed the application for this patent 948,746?

[fol. 175] A. No, I don't think he knew that I had applied for a patent.

X Q. 219. Didn't you tell him that you had applied?

A. No.

X Q. 220. If you invented and used the spouting system on the Lynnhaven Hotel Building in Norfolk in 1906, as you have testified, how do you account for not having filed an application for patent until February 23, 1909?

A. I was not in position, financially, and therefore did not intend to open the way and let others in on the patent, as I was confident that it was a good scheme and I thought that there were other parts of the apparatus that might be taken up, which is generally the case, and improved upon.

X Q. 221. I show you Exhibit No. 1, attached to the rebuttal affidavit of Andrew J. Kearns, which was executed the 23rd day of August, 1920, and call your attention to the hopper 3, shown in the side elevation the bottom figure, and will ask you whether or not it is a fairly correct representation of the shape of a hopper used for discharging the concrete on the Lynnhaven Hotel Building?

A. No.

X Q. 222. What is the matter with it?

A. I had a different construction from that entirely. This is taken from an old hopper which was in general use at Norfolk when I was down there, mine was a different design.

X Q. Well, doesn't the side view to which I have just called your attention present an appearance quite similar to the view of the hopper 2 shown in the photograph Defendants' Exhibit No. 19'?

A. No.

X Q. 224. To control the discharge end of the hopper No. 2, [fol. 176] shown in the photograph did you employ a sliding door, such as that shown in 4 of the top figure of the Exhibit No. 1, above referred to?

A. No, a different design from that.

X Q. 225. But you did employ a sliding door in that construction?

A. A cut-out which I have explained in my previous testimony.

X Q. 226. Did you employ a pivoted cut-out or a sliding cut-out?

A. I don't understand what you mean by a pivoted cut-out. It was fastened on one end with a lever.

X Q. 227. If you will look at the top figure of the sketch Exhibit No. 1 you will notice a lever 5 pivoted at 6 to a part of the hopper structure and connected at its end to the sliding door 4, in the construction employed by you did you employ a lever similar to the lever 5 and did you operate the door to open and close it by such lever?

A. It was not the same design as you have here. I had a lever.

X Q. 228. Did the lever employed for operating the door or gate project outwardly from the hopper?

A. Yes, but owing to the swivel construction the gate had to be different from this.

X Q. 229. And you still desire to testify that whatever gate you employed and the lever for operating it were located between the parts 3 and the parts 2, in Defendants' Exhibit No. 19'?

A. Yes.

X Q. 230. Do you recall from which side of the hopper it was the lever projected?

A. No, sir.

By Mr. Anderson: The affidavit of Andrew J. Kerns and the Exhibit No. 1 attached thereto referred to above are marked for [fol. 177] identification, "Kern's Affidavit and Exhibit No. 1."

Cross-examination closed.

Redirect examination:

R. D. Q. 231. After seeing Mr. Hopkins in Washington, through what cities did you pass in beginning your trip to the Philippines?

A. I stopped in St. Louis, Salt Lake and San Francisco, and sailed from there to the Philippines.

Notice is given that depositions of T. A. Tatterson and R. B. Preston will be taken Monday January 17th in Norfolk, Va., beginning 10 a. m. at the offices of Hughes, Little & Seawell, Law Building.

Deposition closed.

ARTHUR L. SMITH.

Met pursuant to notice, Monday, January 17, 1921, at 10 a. m., and adjourned to the offices of Hamilton H. Chalkley, Notary Public, Room No. 532 Law Building, Norfolk, Virginia.

Present: Cyrus N. Anderson, for plaintiffs; George Bayard Jones, for defendants.

ROBERT B. PRESTON, another witness called on behalf of defendants, being first duly sworn, testifies as follows in answer to questions by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation?

A. Robert B. Preston; age, 39; residence, Norfolk County (Ocean View, Va.); civil engineer. I am engineer to the Commission of Roads and Bridges for the County of Norfolk.

Q. 2. What was your occupation in 1906?

A. The last half of 1906 I was superintendent or inspector rep[fol. 178] resenting the architects in the construction of the Lynnhaven Hotel, Norfolk, Va.

Q. 3. Outline briefly your training and experience.

A. Besides the schooling that I have had and general experience in railroad work, etc., I was connected with the firm of Ransome & Smith in the construction of large concrete factory buildings in New York State, and since that time have had continuous experience in construction work.

Q. 4. Did you ever know Arthur L. Smith?

A. Yes. He was superintendent for E. Tatterson, the contractor constructing the Lynnhaven Hotel mentioned above.

Q. 5. If you are familiar with the apparatus which was used to mix and distribute the concrete during the erection of this hotel, please describe it.

A. The machinery for mixing the concrete was situated at the ground on the Freemason Street side of the Lynnhaven Hotel, and the concrete, after being discharged from the mixer, was raised to the elevation of the several floors upon which it was to be deposited by means of a hopper or lift commonly known as a Ransome hoist. Afterwards, the concrete being dumped into a hopper and later removed for placement upon the floor slab and other portions of the building under construction. As heretofore stated, my recollection of any other method for distributing this material is rather vague, owing to the fact that several years have elapsed since that time during which period I have had to do with a considerable amount of work, and also for the reason that as the representative of the architect my interest was solely in the character of construction being performed and not the means by which it was delivered to the point of deposit,—I mean by this that it was my duty to see that the concrete was properly mixed and applied and therefore I was not particularly interested in the means the contractor used in getting the [fol. 179] material placed on the floors; however, I do remember that one or possibly two wooden troughs were constructed and placed on benches or "saw-horses," by means of which the concrete was distributed over a restricted area around the hopper. In other words, when the area on which no concrete had been laid had become so confined as to make the use of wheelbarrows impractical these troughs were used.

Q. 6. On what was the hopper supported?

A. The hopper, as I remember it, was supported from the hoist, and the hoist was a structure built from the ground to the different floor levels, by means of which the concrete was elevated. I do not remember the exact details of the construction of this hoist.

Q. 7. What is the present name of the Lynnhaven Hotel, and where is it located?

A. It is now called the Southland and is located on the southwest corner of Granby and Freemason streets, Norfolk, Va.

Q. 8. Did the hopper always remain at the same height on the hoist throughout the work?

A. No, it was elevated from time to time or from floor to floor as the work progressed.

Q. 9. Was the hoist of fixed height?

A. No, the hoist, as I remember it, was raised once or twice during the construction. That is the usual practice.

Q. 10. I call your attention to Defendants' Exhibit 21 and ask if the drawing opposite page 42 is a fair representation of the Ransome outfit which you have stated was commonly known about 1906?

A. Yes.

Q. 11. What can you say with reference to the work of Ransome in connection with the art of reinforced concrete buildings?

[fol. 180] A. It is a matter of record that Earnest L. Ransome was the father or pioneer in the construction of reinforced concrete buildings, etc., and during the time of his activity, I believe, there was no higher authority on this character of construction than he.

Q. 12. Is he the Ransome in the firm of Ransome & Smith you referred to?

A. Yes.

Q. 13. I call your attention to Defendants' Exhibit 19, and ask if you recognize the structure?

A. Yes, it is the concrete framework of the Lynnhaven Hotel.

Q. 14. Do you recall about when this building was begun and finished?

A. I went to work for the architect about the 6th day of September, 1906, at which time all excavations had been made and piling for foundations driven and that, together with the fact that I have today seen a plan of this building in the office of the architect in charge of the work, dated June 14, 1906, leads me to believe that the work of actual construction of the building was begun about the middle of the summer of 1906. Upon visiting the architect's office this morning, I learned that Mr. J. Van Peebles was out of the city, Mr. Peebles being the architect in charge of the design and construction of the Lynnhaven Hotel.

It is stipulated that opposing attorneys visited the architect's office this morning and were shown a tracing comprising a front elevation of the Lynnhaven Hotel, dated June 14, 1906, and that if the draughtsman were called to testify he would testify that said tracing was made on or before that date.

Q. 15. Do you recall about when the hotel was finished?

A. In the spring of 1907, probably shortly after the 1st of April.
[fol. 181] Q. 16. Is there anything to help fix this date of 1907?

A. Yet; this is fixed as being the date of the opening of the Jamestown Exposition, for which opening those concerned were endeavoring to have the hotel ready for occupancy.

Q. 17. In what year was the exposition held and what did it celebrate?

A. It was held in 1907 and was in celebration of the three hundredth anniversary of the settlement of Jamestown.

Q. 18. I call your attention to Defendants' Exhibit No. 20 and will ask if this sketch corresponds in its general features with the Arthur L. Smith apparatus you have previously referred to?

A. In a general way it does.

Q. 19. About the time this building was built, what was the practice with regard to the consistency of concrete?

A. Concrete for reinforced building construction was made wet in order that it might be placed around and percolate through the reinforcing bars used in the construction of buildings. This was necessary in order that a dense mass might be created around the bars and in the members being built.

Q. 20. Has there been any change in this practice during your experience?

A. Yes. Before that period the government and others particularly in the construction of large foundations, etc., used a concrete very much dryer, it being necessary to lightly tamp same to flush water to the surface. But personally I have never seen dry concrete used in the construction of beams, girders, columns, etc., of buildings.

Q. 21. At the time the Lynnhaven Hotel was built, did it represent an established type of building construction in this city?

[fol. 182] A. No. I am pretty positive that the Lynnhaven was the first reinforced concrete building constructed in Norfolk.

Q. 22. About how long were the individual sections of the wooden troughs which you say were used by Mr. Smith?

A. I don't remember exactly as to their length, but probably between 10 and 16 feet for each section. The standard length of lumber ordinarily being in even feet, or for instance, 10, 12, 14, 16 and so on.

Q. 23. Were you connected in any way with the construction work on the Vinery building in this city?

A. I was there for a short while after the beginning of the work and later left to take a position with the Government.

Q. 24. Was Arthur L. Smith on this job?

A. Arthur L. Smith was in charge of the job for the contractor when I left it.

Q. 25. Did you see any chutes in connection with this work?

A. As I recollect it, only the foundations for the Vinery were in when I left the job, but it is my recollection that troughs were used in depositing the concrete in the foundations immediately adjacent to the concrete mixer.

Q. 26. When did you first hear of this patent litigation?

A. In the summer of 1920, I don't remember the date exactly.

Q. 27. How did you happen to hear of it?

A. I was told of it by Mr. Anderson who came to see me concerning it.

Q. 28. You refer to Cyrus N. Anderson, one of the attorneys for the plaintiffs, here in the room?

A. Yes, though at the time I did not know whom Mr. Anderson was representing.

[fol. 183] Q. 29. What did Mr. Anderson inquire about in this connection?

A. His inquiries were practically along the same lines as followed in this examination.

Q. 30. Did you answer along substantially the same lines?

A. Yes.

Q. 31. Did you sign an affidavit or other statement at that time?

A. No.

Q. 32. Did the concrete flow without restriction from the hopper to the trough when this apparatus was used on the Lynnhaven Hotel job?

A. Yes, ordinarily it would do that.

Q. 33. You mean there was no way to control the flow?

A. No, I mean that when the gate which held the concrete in the hopper was raised to release the material, the concrete would flow to the trough.

Q. 34. Who operated the gate?

A. It was operated by a laborer.

Q. 35. Do you remember where he stood with reference to the apparatus in general?

A. As I remember it, he stood on a slight elevation at the right of the hopper, facing the hoist from the building.

Q. 36. Are wheelbarrows and carts used at all today in the erection of buildings made of concrete?

A. Yes, they are used by some contractors, particularly on smaller jobs.

Q. 37. The plaintiffs in this case filed in court in the fall certain affidavits. Are you acquainted with Andrew J. Kerns who executed an affidavit August 23rd, 1920?

A. Yes.

Q. 38. Do you recall whether he was employed on the Lynnhaven Hotel throughout the work?

A. It seems to me that he was. He was employed there as a saw-[fol. 184] filer when I first went on the job. Later, I believe he had charge of placing the reinforcement in the building and was afterwards the foreman under Arthur L. Smith, the superintendent and if he left the work before it was completed I don't remember it.

Q. 39. Please look at the photograph attached to Kerns Affidavit and Exhibit No. 1 and state if the sketch therein is an accurate showing of the hopper arrangement as you recall it.

A. In a general way it is, although there are some minor details which are probably different due to Kerns' lack of experience as a draftsman.

Q. 40. Of what material was the Smith hopper made, if you recall it?

A. I don't recall it particularly well.

Q. 41. Was it the standard Ransome hopper?

A. I think not. I think it was one constructed by Smith.

Q. 42. As I understand your previous answers, Kerns' duties were such that he would not necessarily have been on the uppermost floor all the time while the building was in progress, is that correct?

Mr. Anderson: Objected to because the question apparently is stating an inference and because further the facts as stated by the witness do not justify the statement as made in the question.

A. It is hardly likely that he would have been on the upper floor all of the time, except when being employed as foreman or in placing reinforcement.

Q. 43. If you recall W. N. Thornton who made an affidavit August 30th, stating that he was a plumbing and heating contractor having something to do with the Lynnhaven Hotel, kindly state the nature of his duties?

A. I recall the name of Thornton, and as I remember it, he was a subcontractor in charge of installing plumbing and heating system for the building.

[fol. 185] Q. 44. Would his work keep him on the uppermost floor?

A. Not entirely.

Q. 45. Do you recall Roland Brinkley?

A. Yes. He was office man and general timekeeper for E. Tatterson.

Q. 46. Did he spend most of his time on the uppermost floor of this building?

A. He spent very little time on the building at all.

Q. 47. Do you recall J. Samuel Goldbach in the electrical contracting business?

A. There were two men, brothers of that name, on the building, whom I recall, though I don't know now which one was Samuel.

Q. 48. Did you know Wm. T. Baker?

A. Not personally. At the time I was on the Lynnhaven I know that a man named Baker was employed by Tatterson, being in charge I believe of the construction of the Paul-Gale-Greenwood Building at the corner of Granby street and City Hall avenue.

Q. 49. Was he Mr. Tatterson's general superintendent?

A. I don't know what his title was.

Q. 50. Is Mr. Tatterson living now?

A. No, he is dead.

Q. 51. Do you know his son?

A. Yes. He has two sons, the older one named Townley.

Q. 52. Were either of these sons seen by you on the Lynnhaven job at any time?

A. Yes. Townley was on the job as timekeeper.

Q. 53. Where is the Vinery building?

A. It is on Granby Street, east side, approximately 200 feet south of Freemason Street.

Direct examination closed.

[fol. 186] Cross-examination by Mr. Anderson:

X Q. 54. Did I understand you to say on direct examination that Kerns became foreman of the concrete work?

A. I remember it, yes, sir.

X Q. 55. And do you recall about when he became foreman?

A. No, I don't, but it was probably sometime in the fall of 1906, I don't remember that.

X Q. 56. And as foreman he was present while the concrete was being placed upon the different floors, was he not?

A. Yes, when he was foreman.

X Q. 57. Do you recall whether he was foreman from the time that they first began laying concrete?

A. I don't think so.

X Q. 58. During the time that he was foreman, at least, he would have been familiar, would he not, with the means employed for distributing and placing the concrete?

A. Yes.

X Q. 59. And as you remember it, he remained in the employ of Mr. Tattersen and worked on this building until the concrete portion of the work was completed?

A. That is my recollection of it.

X Q. 60. You have stated your recollection is "that one or possibly two wooden troughs were constructed and placed on benches or 'saw horses,' by means of which the concrete was distributed over a restricted area around the hopper." Have you any distinct recollection that more than one trough was used?

A. As I stated before my recollection as to these troughs or this trough is rather indistinct.

X Q. 61. And it is my understanding that no support other than the benches referred to by you was used for supporting the trough? [fol. 187] A. I don't remember the cable as shown on plans I have seen (I refer to the drawing Defendants' Exhibit No. 20), as supporting the trough.

X Q. 62. Then it is your recollection that the trough numbered 4 on Defendants' Exhibit No. 20 was supported by benches and not as shown in that exhibit?

A. My recollection is that the end of the trough furthest away from the hopper was supported on a bench, though of course the end at the hopper was supported by some means.

X Q. 63. Do you remember what that last mentioned means?

A. I do not.

X Q. 64. Will you make a sketch showing the side elevation as you recollect it of the hopper employed for receiving the concrete from the hoist bucket?

A. I don't think that my recollection of the construction of the hopper is sufficiently clear for me to make a true sketch of same, remembering it as I do in only a general way.

X Q. 65. And you have no *distant* recollection then as to how the upper end of the trough designated 4 in Defendants' Exhibit 20, was supported?

A. No.

X Q. 66. Have you any distinct recollection of having seen troughs like those shown in Exhibit 20, shifted around into different positions for depositing the concrete at different places?

A. No, I do not recollect that they were shifted as shown by different angles drawn on Defendants' Exhibit 20.

X Q. 67. Have you been engaged in concrete work prior to the time that you began your work on this building as representative of the architect?

[fol. 188] A. Yes. My position on that building was secured absolutely through a letter of recommendation from Mr. Ernest L. Ransome personally, with whom or by whom I was previously employed.

X Q. 68. And in your previous work for Mr. Ransome had you seen concrete used in the construction of buildings?

A. Yes, extensively. One job at Rochester, N. Y., in particular, which was many times as large as the Lynnhaven Hotel.

X Q. 69. How did the concrete employed in the construction of the Lynnhaven Hotel Building compare with the concrete pre-

viously used in the construction of concrete buildings with which you were familiar?

A. Practically the same consistency, being a mixture of one part cement, two parts sand, and four parts gravel or broken stone. The water in the concrete, being practically the same.

X Q. 70. That is to say, the concrete employed in the construction of this building was of substantially the same firmness or softness as the concrete previously used by you?

A. Yes.

X Q. 71. And more water was not used to make it softer so it would flow down the trough. That is your understanding, is it not?

A. Not that I recollect. My object was to get a concrete consistent with good construction, regardless of what it did in the trough.

X Q. 72. Is it your recollection that a trough was used for distributing the concrete on all the floors of this building?

A. I don't remember as to that.

X Q. 73. I wish you would take photograph, Defendants' Exhibit No. 19', and examine the hopper as shown near the top of that [fol. 189] photograph and state whether or not it recalls to your mind the construction of the hopper with sufficient definiteness to enable you to make a sketch of the same?

A. No, sir, that only gives you a general outline of one side of the hopper; it does not show any details on the front part of the hopper at all as to the means of raising the gate for releasing the concrete from the hopper, or as to anything that may have been placed there for the holding up of the trough.

X Q. 74. Do you mean that the gate is secured to a part of the hopper beyond or in front of any portion of the hopper construction which is shown in this photograph, Defendants' Exhibit 19'?

A. As I remember it, the gate consisted of a piece of steel which worked on a hinge placed at the lower part of the hopper, raised up and down by means of a lever in the hands of a workman, thus creating a space through which the concrete flowed into the troughs or wheelbarrows, as the case might be.

X Q. 75. And it is your understanding then that the lower end of the hopper is not shown in this photograph?

A. Not with sufficient distinctness for me to make a drawing of it from that photograph.

X Q. 76. Are you able to find in this photograph, Exhibit No. 19', any portion of the spouting or troughs which it is claimed were used in the distribution of the concrete?

A. No.

X Q. 77. And I understand also that you have no recollection of any swivel connection between the upper end of the trough 4 shown in Exhibit 20 and the lower end of the hopper?

A. No.

X Q. 78. As a matter of fact, was or was it not common practice [fol. 190] prior to the time that you took up your work on the Lynnhaven Building, to dump concrete through an ordinary trough,

temporarily supported in some suitable manner, into foundation work or other similar work?

A. I have used a trough running directly from the concrete mixer to point of deposit in the construction of large footings or abutments where the bulk of the concrete is distributed close to the point of mixing. With Ransome, no troughs were used because the means of transporting the material was from a central dumping point along constructed runways in concrete carts and dumped from them.

X Q. 79. Then the troughs which you have used have been in more recent years, that is, subsequent to the construction of the Lynnhaven building?

A. No, prior to the construction of the Lynnhaven Building; in Pennsylvania on railroad construction.

X Q. 80. Were these troughs supported on trestles or benches or just how were they supported?

A. The point of deposit being very much lower than the mixer the trough rested simply on the edge of the excavation, being held in place by stones. That was a very short trough, of course, probably only 10 feet long.

X Q. 81. Isn't it probable therefore that the reason why you do not recall more distinctly the construction employed on the Lynnhaven Building was because a single trough was used and you saw nothing peculiar in it over and above what you had already used?

Mr. Jones: Objected to as grossly leading and as calling for an immaterial conclusion.

A. I couldn't say that that was my reason for not remembering distinctly the details in the matter, but rather, as stated above, that I was not particularly interested in the means of conveying the material to point of deposit.

X Q. 82. You have testified that the cable designated 10 shown [fol. 191] on Exhibit No. 20, was not employed in connection with the Lynnhaven Hotel construction. Was the trough 4 shown in that exhibit, supported upon benches?

A. I testified that I remembered that the trough was supported on benches; I did not testify that the cable was not used but that personally I did not remember of its having been used.

X Q. 83. How far along had the pouring of the concrete proceeded on the Vinery Building when you discontinued your work in connection with that building?

A. As I remember it, at the time I left the building, all piles had been driven, excavations made, and a part and possibly all of the footings poured.

X Q. 84. What is your recollection as to the use of troughs for distributing the concrete during the time you were employed on that building?

A. They could not have been used every extensively up to that time because the concrete mixer was stationary, whereas the footings were widely scattered and therefore this practice could only have

been pursued in pouring the footings immediately adjacent to the mixing plant.

X Q. 85. Have you actual recollection of the use of troughs in pouring the footings immediately adjacent to the mixing plant?

A. No, I would not testify that I actually remember this being done on this building.

X Q. 86. What recollection have you as to the proportion of floor area on which the concrete was distributed or placed by means of troughs on the Lynnhaven Building?

A. I would say not in excess, I should think, of ten per cent. of the floor, although this is an approximation.

X Q. 87. Is it your recollection that troughs were used for distributing the concrete on the top floor and also on the roof?

[fol. 192] A. I don't believe that they were used on the roof or top floor, though I am not clear as to that. However, I do not believe that the hoist was constructed to a sufficient elevation to have admitted of this process on the roof of the building.

X Q. 88. How about the top floor?

A. It might possibly have been done on the top floor; I don't remember.

X Q. 89. Do you recall whether or not there was a short spout or trough between the upper end of the trough 4 and the hopper 3 shown in Defendants' Exhibit No. 20, the trough and hopper being shown in sketch Defendants' Exhibit 20?

A. I do not recall it.

X Q. 90. You are familiar with the use of troughs or spouting as now employed in the distribution of concrete for buildings, are you not?

A. In a general way, I am, but since this system has come extensively into use I have been employed not on building work but in the construction of roads and streets.

Q. 91. Do you remember about how long ago it was that this system came into use?

A. I think within the last four or five years, to any extent.

Redirect examination by Mr. Jones:

R. D. Q. 92. You stated that you do not recollect that the troughs (X Q. 68) were shifted as shown by different angles drawn on Defendants' Exhibit No. 20. Did you mean to imply that they might have been shifted to some other angle, or that they were not shifted at all?

A. What I mean is that I do not remember that the troughs were so constructed with a hinge or otherwise, or in such a collapsible manner as to admit of shifting them indiscriminately over the area covered, though of course the supports may have been shifted to [fol. 193] admit of depositing material at different points within the area reached by the troughs.

R. D. Q. 93. Do you recall in a general way whether the upper end of the upper chute was connected to the hopper in such a way that the chute may have been moved somewhat from side to side at its outer end to change the direction in which the chute was pointed?

Mr. Anderson: Objected to because the witness has already testified that he does not remember what the connection was between the upper end of the chute shown in Defendants' Exhibit 20 and the hopper.

Mr. Jones: The question does not ask for the specific connection but whether it would permit the outer end of the chute to be moved in the manner stated.

A. I do not remember the details of construction at the junction point of the hopper and the chute.

R. D. Q. 94. However, such an arrangement would have been a very natural thing, would it not, in view of the obvious purpose of the apparatus?

Mr. Anderson: Objected to as a conclusion of counsel and as grossly leading.

A. That would depend upon the object of the apparatus. If it was the desire of the operator to distribute the material at different angles from the hopper, it is natural to suppose that some such arrangement would have been necessary, but if the material was only to be delivered straight away from the hopper a stiff trough would have served.

R. D. Q. 95. Do you recall that the trough or troughs always pointed in the same direction when you saw them, or was there any variation in the same?

[fol. 194] A. As I think I have stated before, I do not remember as to whether there were any variations in the angle from the hopper.

R. D. Q. 96. Prior to 1906, had you ever seen a chute for concrete or any other purpose, supported at one end by a block and tackle or a boom and pivotedly supported at the other end so that the outer end might swing to the arc of a circle?

A. No.

R. D. Q. 97. Did Mr. Anderson, previously referred to, request you to sign any statement or affidavit at the time you say you saw him, approximately last summer?

A. I don't recall that he did.

Recross-examination by Mr. Anderson:

R. X Q. 98. Is this Lynnhaven Hotel Building an L-shaped building?

A. No, as I recall it, it is not exactly an L-shaped building, but is more in the shape of a "U," with a court in the back of it. It is hard to remember those details right off-hand.

R. X Q. 99. Do you recall whether a trough was used for placing the concrete at any other place on this building except in proximity to the hoisting tower?

A. I don't know exactly what you mean by proximity. How close proximity.

R. X Q. 100. You have testified that it is your recollection that one or possibly two troughs were used for receiving concrete from the hopper. Now, what I want to know is, do you remember whether

or not a trough was used for placing the concrete at any point a distance clear beyond that which could possibly have been reached by the trough or troughs which you have stated you do remember? [fol. 195] A. As I have stated before, I do not believe that the concrete was deposited from the troughs at a distance exceeding 30 or 40 feet from the hopper.

Deposition closed.

Robt. B. Preston.

Adjourned to 2 p. m.

Met pursuant to adjournment.

TOWNSEND A. TATTERSON, another witness called on behalf of the defendants, being first duly sworn, testifies as follows in answer to questions asked by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Townsend A. Tatterson; age, 35; residence, 1019 Brandon Avenue, Norfolk, Va.; occupation, Inspector of Construction U. S. Navy.

Q. 2. Are you familiar with the apparatus used for distributing concrete on the Lynnhaven Hotel?

A. Yes.

Q. 3. What was your connection with this work?

A. Timekeeper for my father, who was the contractor, Mr. E. Tatterson.

Q. 4. Describe briefly the apparatus referred to beginning with the mixing of the concrete.

A. My impression of the matter is that he had a tower built on the Freemason Street side of the building, with the concrete mixer on the ground level. The concrete was dumped into a conveyor and was hoisted to the desired point, where it was dumped into a hopper and it was distributed on the building by the means of a trough.

Q. 5. How was the trough supported?

A. By horses.

Q. 6. Can you describe this apparatus a little more fully?

[fol. 196] A. My impression of the matter is that this hopper was built alongside of the tower with some kind of a connection, swivel connection, I should say—I don't know what kind of connection it was. At this connection was a gate that controlled the flow of the concrete through the trough, which was controlled by a laborer; he raised and lowered the gate as he wanted it.

Q. 7. What became of the concrete when it reached the end of the trough?

A. It was deposited wherever they wanted it.

Q. 8. How could the point of deposit be changed?

Mr. Anderson: Objected to because it is suggestive of the answer desired, and it is clearly leading.

A. By swinging the trough.

Q. 9. How was the trough swung?

A. In what way, do you mean? The trough was swung by moving the horses and swinging the first trough around on its support, which was swung, according to my recollection, by means of a cable or rope; which of the two I don't remember. It was one or the other.

Q. 10. You have referred for the first time to "the first trough," and also the trough. Do you mean to imply there was more than one trough?

A. Yes.

Q. 11. How many of these troughs were used on this work?

A. It is hard for me to say, but I think two or three.

Q. 12. About how long were the individual troughs?

A. I should say they were as long an average board, 14 or 15 feet.

Q. 12a. You have referred to a cable or rope for the first trough. Please explain how this cable or rope was connected?

[fol. 197] A. I think it was connected from the top of the tower to the end of the first trough.

Q. 13. On what was the hopper mounted?

A. The hopper was made fast to the tower.

Q. 14. About how high was the hopper above the point at which the concrete was being deposited?

A. Do you mean deposited into the hopper or on to the floor?

Q. 15. I mean on the floor or wherever it was being deposited.

A. I should say the hopper was up a sufficient height in order to get a good flow, a strong flow. To the best of my recollection the hopper itself was two floors higher than the actual work.

Q. 16. What was the floor made of that you referred to?

A. What do you mean, the forms?

Q. 17. Yes.

A. Wooden forms.

Q. 18. Then, as I understand your previous answers, the concrete flowed from the hopper on the tower through a gate controlled by a workman and through two or possibly three lengths of trough, and was deposited directly onto the forms from the last section of trough. Is that correct?

By Mr. Anderson: Objection is made to counsel for the plaintiffs testifying. The question is obviously leading and every objectionable.

A. Yes.

Q. 19. Was it ever necessary to deposit concrete at a greater distance from the hopper than the combined lengths of the troughs? And if so, what was done in that case?

A. They run it into wheelbarrows and wheel it.

Q. 20. From what was it run into the wheelbarrows?

[fol. 198] A. Run through the chute.

Q. 21. Which chute?

A. The concrete chute is the only chute I know. They run it through the chutes as far as they possibly could into a wheelbarrow and wheeled it to a distance that they could not carry by the chute.

Q. 22. You have stated that one of the troughs was swung by moving the horses. Did this trough remain in line with the first section of trough in all cases?

A. Yes, it did when it come to shooting it out at a right angle, getting it out in a straight flow. Of course there were exceptions to this.

Q. 23. Please describe the exceptions?

A. Well, for instance, if you wanted to shoot some concrete along the tower itself, he would back his concrete up to a short chute, which was shot into another small chute back into the tower. I wouldn't say into the tower, around the tower.

Q. 24. I call your attention to a photograph, Defendants' Exhibit 19', and ask if you recognize the structure shown therein?

A. Yes, that is very familiar. That is the frame construction of the Lynnhaven Hotel built by my father.

Q. 25. Is your father living?

A. No.

Q. 26. Was your father the E. Tatterson whose name appears on the sign in the photograph?

A. Yes.

Q. 27. I call your attention to Defendants' Exhibit No. 20 and will ask if this sketch is an approximate representation of the apparatus you have been describing.

A. Yes, sir, this is approximately what I have been trying to tell you.

Q. 28. What do you say the dotted lines indicate in this sketch, referring to the actual use of the apparatus?

[fol. 199] A. Well, this dotted line is what I tried to tell you about backing the concrete up from the main chute into a smaller chute and distributing it around the tower. Again the dotted line looks as if you could raise or lower this by means of pulleys which could distribute the concrete at a different angle.

Q. 29. Do you recall of your own knowledge whether the cable you have referred to was arranged to raise or lower the first section of chute?

A. I couldn't say positively, but I think it was.

Q. 30. Please read your answer to Q. 21 and state whether the last word is correctly written?

A. That is what I mean. They run the concrete through the chutes as far as they possibly could, and then dumped it into the wheelbarrows.

Q. 31. Then, as I understand it, this last word should be plural and not singular; is that correct?

A. Yes.

Q. 32. Were you employed on this building during the entire time it was being built?

A. No.

Q. 33. Where were you the rest of the time?

A. Off at college, Washington & Lee University.

Q. 34. What kind of a course were you studying at college?

A. Engineering.

Q. 35. About when did you see this Lynnhaven Hotel apparatus with reference to your college career?

A. During my vacation in the summer of 1906. I was in my third year at college.

Q. 36. About how late in the summer of 1906 did you see this apparatus?

A. Well, I worked on the hotel up to the time of the fall opening of the college, which was along about the 15th to 20th of September.

[fol. 200] Q. 37. And you saw these chutes you have referred to before you returned to college?

A. Yes.

Q. 38. Who got up this chuting rig you have been describing?

A. Well, from what I heard my father say, it was Arthur Smith who designed the durned thing.

Mr. Anderson: Answer objected to as being hearsay.

Q. 39. Did you ever meet this Arthur Smith?

A. Oh, yes.

Q. 40. What was his connection with the work?

A. General superintendent.

Q. 41. Do I understand that it was only through your father that you gathered that this was Smith's apparatus?

Mr. Anderson: Question objected to because witness has already stated that it was through his father that he understood that it was Smith's apparatus.

A. My father and myself discussed it, discussed it at home nights, and I think I recall him saying that Smith was a pretty smart man to rig that up.

Q. 42. Did you ever see Mr. Smith working in the vicinity of this apparatus?

A. Yes.

Q. 43. How do you fix the year 1906, rather than some other year, in your previous answers?

A. Well, it was the year before the exposition. My father was one of the big stockholders of this particular hotel, and he was very anxious to complete it so as to take care of the exposition crowd.

Q. 44. Have you ever been employed on other concrete buildings?

A. Yes. Was employed on this one first, the first one in Norfolk.

[fol. 201] Q. 45. Is your recollection of the details of this job any different from your recollection of other jobs you have been employed on?

Mr. Anderson: Objected to as leading and apparently as trying to indicate the answer desired.

A. What do you mean by details?

Q. 46. Aside from details, what would you say as to your recollection of the manner in which this building was built? Is it good, bad, or indifferent?

A. Well, the details of construction of every building are different, but I was employed on the building across the street from the Lynnhaven Hotel, known as the Vinery Building, now the Philip Levy Building, which was built by my father, and the principle of the construction was approximately the same.

Q. 47. I did not intend to ask so much about the details of construction as to this building as much as to the way you remembered it. Can you answer a little more fully in this regard?

Mr. Anderson: The question is objected to because it asks the witness for an opinion as to his own recollection or memory, and not as to facts.

A. From the point of construction, it was the same as the Lynnhaven, both being poured concrete construction, and the principles were practically the same.

Q. 48. About when was the Lynnhaven Hotel finished?

A. I should say in the spring of 1907.

Q. 49. Was there anything in connection with the finishing of this building that causes it to fix yourself in your memory?

A. Yes, as I said before, my father was one of the big stockholders in the building and they worked day and night to complete it on time.

Q. 50. Did you see this building about the time it was finished?
[fol. 202] A. Yes, sir.

Q. 51. Will you kindly explain how you happened to be in Norfolk at that time?

A. Well, my father wrote me while I was off at college that his present financial condition was at that time very bad and the banks had refused to let him have more money, and told me I had better come home; and at some future date he hoped to send me back to college to finish my course and graduate. I came home in early 1907 and went to work again with him.

Q. 52. On what jobs were you employed when you came home?

A. Lynnhaven Hotel and the building across the street, the Vinery.

Q. 53. Referring again to the concrete chuting apparatus on the Lynnhaven Hotel, how was the gate operated?

A. It was raised and lowered by a laborer who stood on a platform and raised it as they needed the concrete, to let it go through the chute.

Q. 54. Who was your father's superintendent on the Vinery Building?

A. Arthur Smith looked after both those jobs.

Q. 55. Do you recall whether his full name was Arthur L. Smith?
A. Yes.

Q. 56. What apparatus did Smith use on the Vinery Building for distributing concrete?

A. Practically the same he used on the Lynnhaven.

Q. 57. About how many lengths of chute did you employ on the Vinery job?

A. I think it was two or three.

Q. 58. Can you describe briefly the size or height of the Vinery Building?

A. The Vinery Building is a two-story affair, with a small third floor facing Granby Street.

[fol. 203] Q. 59. What about its length?

A. It runs from street to street.

Q. 60. You mean about a block long?

A. It is a block long.

Q. 61. About where was the tower located on this Vinery Building?

A. Do you know where the present elevator is located now? That is practically in the center of the building.

Q. 62. About how far would you estimate that the concrete flowed through the chutes on the Vinery Building—as a maximum?

A. I should say fifty feet.

Q. 63. And in this case, were the individual chutes about the same length as on the Lynnhaven job?

A. I couldn't say positively, but I think they made some improvement on that chute on this building, because it was at a little later date. I am really inclined to think that they really shot it further on it than they did on the Lynnhaven.

Q. 64. When did you first meet Mr. Cyrus N. Anderson, the attorney who is present for plaintiffs in the room today.

A. Some time this past fall, I think.

Q. 65. What was the occasion for this meeting?

A. Mr. Anderson came over to my home to see me about the same thing you are asking me now.

Q. 66. You mean he asked you about this chuting apparatus of Arthur L. Smith's?

A. Yes.

Q. 67. What did you tell him?

A. I told him what I told you with the exception of the Vinery Building. I don't think he asked me anything about the Vinery.

Q. 68. On how many different occasions did you see him?

[fol. 204] A. Twice.

Q. 69. About how far apart were these visits?

A. Couple of months, I should say.

Q. 70. Did he ask you to sign any statement regarding your recollection of this apparatus?

A. No, sir.

Q. 71. Did he explain why he was making these inquiries?

A. I don't think he did. I don't recall asking him. It wasn't of any interest to me. It was ancient history so far as I was concerned.

Q. 72. As the Lynnhaven Hotel became higher, what was done with the hopper?

A. It was raised according to the construction. The higher the building, the higher the tower.

Q. 73. You mean both the tower became higher and the hopper was mounted in a higher position on the tower?

A. Yes.

Q. 74. Did you ever know Andrew J. Kerns, who lives in Richmond and who made an affidavit on August 23, 1920, in this suit?

A. Yes. Kerns was a labor foreman for my father.

Q. 75. Was he employed on the Lynnhaven Hotel job?

A. Yes. He had charge of a gang of niggers. My recollection of Kerns is he had charge of a gang of niggers keeping the structure clear of all forms and rubbish as they were taken off the concrete.

Q. 76. Was he employed steadily throughout the work?

A. I wouldn't say steadily any more than a labor foreman usually is on a construction job. He would come on the job some Monday mornings in not any too good shape; father would fire him and just as soon as he got straight again he would hire him over again, which he did with a lot of other men.

[fol. 205] Q. 77. Would you say he was qualified by education and experience to make a drawing of concrete hoisting and distributing apparatus

Mr. Anderson: Objected to as immaterial and irrelevant and also for the reason that there is no evidence in the case that Kerns has ever attempted to make such a drawing as is referred to.

A. From my experience with Kerns at that particular time I would say that his education was limited. I couldn't say whether he could make a drawing or not.

Q. 78. I call your attention to the sketch attached to Kerns' affidavit and will ask if the hopper shown therein is an accurate representation of the hopper on the Lynnhaven Hotel with respect to its shape and its location with reference to wheelbarrow and floor?

A. This hopper arrangement here is similar to the other with the exception that it doesn't show any trough or chute. What is this 5, a chute?

Q. 79. You state whatever you think the sketch represents to a man like yourself, who has studied engineering.

NOTE.—Witness examines the sketch several minutes.

A. I can't say what 5 is. That figure 5 looks to me like it should be in connection with figure 4 although figure 4 doesn't show the sketch complete.

Q. 80. Do you refer to numeral 4, when you say "figure 4"?

A. Yes.

Q. 81. I call your attention to Defendants' Exhibit 21, the drawing opposite page 42, and will ask if you have ever seen apparatus of that character in use, and if so, about how long?

A. This apparatus here is similar to the one we used in the construction of the building.

Q. 82. In what respect is it similar?

[fol. 206] A. The construction of the tower and the conveyor, also the bin.

Q. 83. Where did you get the concrete bin or hopper used on the Lynnhaven Hotel building?

A. It was a home-made affair built on the job.

Q. 84. Do you know who built it or had it built?

A. Smith, according to my recollection, had the whole thing built.

Q. 85. What I started to ask before was, whether apparatus of this general type has been used on buildings other than the Lynnhaven Hotel, and if so, for about how many years?

A. This apparatus here was used on numerous structures.

Q. 86. Do you know any of the following parties who have also filed affidavits on behalf of the plaintiffs in this case: Walter N. Thornton, Roland Brinkley, J. A. S. Goldbach, Wm. T. Baker?

A. Yes, I know all of them.

Q. 87. If any of them were connected with the Lynnhaven Hotel job, would their connection be such that they would have been directly concerned with the apparatus used there for distributing concrete?

A. Mr. Thornton was a plumbing contractor; Mr. Goldbach was an electrical contractor; Mr. Brinkley was my father's secretary; and Mr. Baker, he was general superintendent of the Botetourt's apartment. That was under construction at the same time the Lynnhaven was.

Q. 88. If these parties had occasion to visit the Lynnhaven building during its erection, would they have been more concerned with the uppermost floor of the construction than with any of the others?

Mr. Anderson: Objected to as calling for the opinion of the witness.

A. Mr. Brinkley never had occasion, I don't think, to visit the construction [fol. 207] only on Saturdays, paydays, and Mr. Baker, I don't think he had time to get down there. As far as the others are concerned I couldn't state, but personally I took an interest in the construction, hoping one of these days to get in the contracting business myself.

Q. 89. Have you any photographs showing this Lynnhaven building under construction, or the Vinery building?

A. No, sir.

Q. 90. Have you ever had occasion to look through your father's records?

A. Yes. Some years ago I wanted to look up some records, but I was never successful in finding them.

Q. 91. Was there no photographer employed by your father to photograph these buildings?

A. He had pictures taken during the construction for advertising purposes.

Q. 92. Have you asked the photographer if he could find any such pictures of the Lynnhaven Hotel?

A. Yes.

Q. 93. When did you ask him, and what did he find?

A. I asked him today and he said he couldn't find any.

Close of direct examination.

Cross-examination by Mr. Anderson:

X Q. 94. What time did you begin your work as timekeeper on the Lynnhaven building, now known as the Southland Hotel?

A. In the summer of 1906.

X Q. 95. About how early in the summer of 1906?

A. I couldn't say positively; about the middle of the summer, I think.

X Q. 96. Would you say July or August?

[fol. 208] A. It was one or the other.

X Q. 97. But you don't remember which?

A. Don't remember which month, no, sir.

X Q. 98. About how late was it in September that you left to go to college for the session of 1906-1907?

A. Between the 15th and 20th of September.

X Q. 99. When was it that you next worked on that building?

A. I should say about the following February, in 1907.

X Q. 100. Just what were your duties as timekeeper in 1906?

A. Keeping the records of the men's time and their duties so as to give it to my father's secretary every Thursday.

X Q. 101. Did you have an office down at the Lynnhaven Building while it was being constructed?

A. Yes.

X Q. 102. Just where was your office?

A. Where the photograph shows it, on the corner of Freemason and Granby.

X Q. 103. I mean your own particular office, where was it with respect to the building at the corner of Freemason and Granby Streets?

A. The particular office was on Granby Street on the northeast corner of the hotel.

X Q. 104. On the first floor?

A. It was raised up so that the people could walk under it on the first floor.

X Q. 105. Just tell us how you got the time for the men who were working on the job?

A. I went around the building and checked up the names and the numbers.

X Q. 106. You mean you went from place to place in the building, as it progressed?

A. Yes.

[fol. 209] X Q. 107. How often did you do that?

A. On an average of four times a day.

X Q. 108. How far along was the construction of this building at the time you left for college which you have testified was in September, 1906?

A. I think it was around the third floor. I think the third floor form was set.

X Q. 109. Do you remember about how far along the building was

when they began to use the trough to which you have testified, for distributing the concrete?

A. No.

X Q. 110. Is it your recollection that they were using the trough to distribute the concrete when you first went to work as timekeeper?

A. I couldn't say positively, because I didn't get around the building for the first two or three weeks while I was there. I was looking after the—I was in the office on the job there studying the details trying to learn something about construction.

X Q. 111. Was that while you were timekeeper?

A. Yes.

X Q. 112. Then, for the first two or three weeks after you became timekeeper you went up on the building very little. Is that correct?

A. Yes.

X Q. 113. Then it wasn't necessary for you to go up on the building in order to get the time of the men?

A. Yes, it was. My father had a timekeeper on the job when I went on it and I got my records from him up until the time of his dismissal.

X Q. 114. Then you weren't actually timekeeper at first, were you?

A. Yes, I turned in all the records to the secretary once a week so he could make up the payrolls.

X Q. 115. During the first two or three weeks after you went on [fol. 210] the building as timekeeper, did you or the other man get the time of the men?

A. Both, both, but he made more frequent visits at that time than I did.

X Q. 116. In your answer to X Q. 110 you say that you didn't get around the building for the first two or three weeks while you were there, then it was only the last two or three weeks of your period there in 1906 that you got around the building. Is that correct?

A. I shouldn't say that. My impression is I was on the building about two months during my vacation; that is my impression of it.

X Q. 117. I think you said in your direct testimony that you saw me twice some time last fall, did you not?

A. I wouldn't say fall; summer or fall. I know I came off my vacation in July. It was some time after that, but the exact date I don't remember.

X Q. 118. I think you said also, did you not, that it was about two months between my first visit and my second visit?

A. I said it was some time about two months, but I never paid any attention to the time. This matter never interested me, so I never paid any attention to it.

X Q. 119. How long was it after I saw you that somebody else came around and talked with you about this matter?

A. Four or five months, I guess.

X Q. 120. When was it that somebody came around to see you about this matter, that is somebody besides myself?

A. Some time before Christmas.

X Q. 120. Who was it?

A. Mr. Smith.

X Q. 121. What did Mr. Smith say to you about this matter that you have been testifying about today?

[fol. 211] A. He asked me did I have a recollection of his chutes.

X Q. 122. Is that the first question he asked you?

A. I couldn't say that. I would say no, it wasn't the first question he asked me. Mr. Smith and myself hadn't seen each other for quite a number of years, and the first question he asked me was how my family was getting along, how we were getting along and how everything was getting along—just discussing old times.

X Q. 123. You mean Arthur L. Smith, do you not?

A. Yes.

X Q. 124. When he first asked you about your recollection as to the use of chutes on this building, what did you say to him?

A. I told him I did recollect him using chutes.

X Q. 125. What else did you say about it?

A. He asked me to give him my impression of how I recollect it and I told him.

X Q. 126. You told me what he said to you; what I want is what you said to him?

A. I told him practically the same thing that I said before in this investigation or whatever you call it.

X Q. 127. Do you mean that when he first spoke to you about it that you told him that you remembered the use of chutes and also the use of a cable to support the outer end of the first chute?

A. He asked me to describe it, to describe my recollection of the way the concrete was distributed.

X Q. 128. Would you mind repeating just as nearly as you can now that description that you gave him?

A. The description I gave Mr. Smith was that the concrete was hoisted in a conveyor to the distance required and dumped into a bin which bin had a gate operated by a laborer to let the concrete flow through the chute.

[fol. 212] X Q. 129. And that was all you said to him?

A. No.

X Q. 130. Go ahead and give us the rest.

A. He asked me, would I recognize some pictures, and I told him I didn't know. He showed me the pictures and I did recognize them.

X Q. 131. Was that all you said to him about the distribution of concrete by chutes?

A. I think that is all he asked me.

X Q. 132. That is all you can recall that you told him?

A. Yes, that is all I can recall.

X Q. 133. Then you didn't remember at that time about the use of the cable, did you?

A. Yes, I just explained that to you.

X Q. 134. No, in repeating what you said to Mr. Smith, you didn't say anything about the cable. Is it not a fact that Mr. Smith told you that he used a cable to support the outer end of the first chute and you agreed with him?

A. I can't recollect Smith telling me any such thing as that

X Q. 135. Do you recall why it was that at neither of the interviews which I had with you you said nothing about the use of a cable to support a chute?

A. I don't recall you asking me any such question.

X Q. 136. Do you recall that I asked you to tell me all you remembered about how the concrete was distributed?

A. I do and I think I told you just exactly what I said.

X Q. 137. Don't you remember that when I showed you the affidavit of Arthur L. Smith which was filed in this case on or about the 9th day of August, 1920, and called your attention to the photograph and pencil sketch attached thereto, that you stated that you [fol. 213] had a faint recollection that Mr. Smith used a trough of some kind, but you couldn't remember anything about it?

A. I recollect you showing me these papers with the sketch and a photograph. I don't recall saying I didn't know anything about it.

X Q. 138. You now have in your hand the affidavit of Arthur L. Smith, to which I have just referred. Do you recall that I showed you that affidavit with the sketch and photograph attached on both occasions when I visited you?

A. Yes, I recall you showing me these papers.

X Q. 139. Can you recall whether or not there was anyone with me when I showed them to you, and if so, who was it.

A. I don't recall, Mr. Anderson, whether it was your first or second visit that you showed me those papers. I know on your first visit you were alone. On your second visit you had Kerns with you.

X Q. 140. Do you mean Andrew J. Kerns?

A. Yes, sir.

X Q. 141. The same man to whom you previously referred in your testimony. Is that not so?

A. Yes, sir.

X Q. 142. Do you recall whether I showed you this affidavit of Smith's at the time Mr. Kerns and I were at your house, and when you were interviewed in regard to this matter?

A. I don't recall whether it was on the first or second visit when those papers were shown me.

X Q. 143. What is your recollection as to the way in which the upper end of the trough 4 shown in Defendants' Exhibit 20 was connected to the lower end of the hopper 3?

A. I don't recall exactly how it was connected. It was connected in some sort of way that you could swing it around, that is the best of my recollection of it.

X Q. 144. Are you sure it was connected at all? Are you willing to swear it was connected at all?

A. It had to be connected in some sort of way to keep from spilling the concrete, but as to the details I don't remember.

X Q. 145. Wasn't it supported on horses or benches all together?

A. No, sir.

X Q. 146. Did you assist in any way with the work in connection

with the operation of the chutes or with releasing the concrete from the hopper?

A. No.

X Q. 147. You had nothing to do whatever with that work, did you?

A. No.

X Q. 148. All you did was to look after the time of the men?

A. No, I looked after assisting in moving the sand and gravel to keep things moving.

X Q. 149. Where were you moving the sand and gravel to?

A. Moving it to the building.

X Q. 150. You mean to the concrete mixer at the base of the tower or hoist?

A. Yes, sir.

X Q. 151. How much of your time did that take?

A. Oh, I had a bicycle and I rode up and down the street to keep the teams from loafing; they only had a short haul.

X Q. 152. Did you spend most of your time at that?

A. No, sir.

X Q. 153. Where did the workman who operated the gate at the lower end of the concrete hopper, stand?

[fol. 215] A. He stood on a platform by the gate.

X Q. 154. How high was that platform from the floor?

A. I should say 14 or 16 feet.

X Q. 155. Is this photograph Defendants' Exhibit No. 19' like the one that Arthur L. Smith showed you when he came to see you some time ago?

A. Yes.

X Q. 156. Does that photograph show any of the troughs to which you have been referring?

A. No.

X Q. 157. Is it your recollection that the upper end of the trough 4 shown in Defendants' Exhibit 20 was connected directly to the hopper 3?

A. Yes. My recollection is the trough was connected on to the hopper.

X Q. 158. You don't recall any short spout in between the upper end of the trough 4 and the hopper 3, do you?

A. No.

X Q. 159. Describe your recollection of just how the upper end of the trough 4 was connected with the hopper.

A. I can't do it. I don't recollect exactly how it was connected.

X Q. 160. Do you remember whether it was rigidly connected to it?

A. No, I don't know whether it was rigidly connected to it or not. I know it was connected on in such a way that you could swing it around. As to the details of the connection, however, I don't remember.

X Q. 161. You never saw it swung around, did you?

A. Yes, sir, saw it moved in different positions.

X Q. 162. What is your recollection as to how high the building was when you returned in February, 1907?

A. I think they were pouring the roof.

[fol. 216] X Q. 163. And you were not employed on the building from the time you left to go to college in September, 1906, when you have stated the building was up to the third floor, until it was up to the roof. Is that correct?

A. Yes.

X Q. 164. Did Mr. Smith tell you that the upper trough 4 as shown in Defendants' Exhibit 20 was connected to the hopper so that it could be swung around?

A. Mr. Smith didn't tell me anything.

X Q. 165. Just what did Mr. Smith say to you about this construction when he saw you some time ago?

A. No more than I have previously said.

X Q. 166. I don't recall what you have testified that Mr. Smith said about this structure. Will you please state now just what Mr. Smith said to you about this construction?

A. Mr. Smith asked me, did I remember how the concrete was distributed on this building. I told him I did.

X Q. 167. And that is all he said to you about it?

A. No, he asked me would I give him an affidavit as to what I remembered, and I told him I would.

X Q. 168. You mean that during the whole time of his conversation with you, he said nothing about what the construction was?

A. Mr. Smith asked me did I recollect as to how the concrete was placed and would I be able to recognize a photograph. Mr. Smith didn't tell me how it was placed.

X Q. 169. He didn't mention to you while he was talking to you about this matter that the upper end of the first trough was connected with the hopper so it could be swung around, did he?

A. No, I have seen the thing swing around. He didn't tell me how it was connected, because I don't remember.

[fol. 217] X Q. 170. Then you have no idea as to how the connection between the upper end of the first chute and the hopper was made?

A. No, sir, I don't recollect how it was connected.

X Q. 171. Is it your recollection that all of the concrete which was placed in between the outer end of the first chute as shown on Exhibit No. 20 and the tower 1, was by means of the chutes?

A. I don't remember.

X Q. 172. Do you remember whether any of the concrete adjacent and near the tower was conveyed by wheelbarrows?

A. Yes, it was conveyed by wheelbarrows; it was conveyed by the chute also.

X Q. 173. I understood you to say in your direct examination that the concrete in the position I have just described was placed by chutes. Which of your answers is correct?

Mr. Jones: Counsel is requested to show the witness the statement referred to.

I am referring to your answer to question 23.

A. Both of them are correct.

X Q. 174. Just what do you mean?

A. I mean he shot his concrete around the tower where it was most convenient with the chute, and where it wasn't convenient he would place it in a wheelbarrow.

X Q. 175. When he placed it by means of a wheelbarrow, was the concrete discharged from the hopper right into a wheelbarrow?

A. No, sir, the hopper was too high up.

X Q. 176. How close, according to your recollection, was the upper end of the first chute to the lower end of the hopper?

A. Right close up to it, close as it could get to it.

X Q. 177. Jammed right up against it.

[fol. 218] A. I shouldn't say it was jammed, it might have been at that, but it remained so that you could move it.

X Q. 178. You never helped to move it, did you?

A. No, sir.

X Q. 179. Is it your recollection that cables were used to support the outer end of the first chute which you testified was used on the Vinery Building?

A. Yes.

X Q. 180. Is your recollection distinct and definite as to that?

A. My recollection is that the method of distributing the concrete was the same on both buildings.

X Q. 181. And it is your recollection that more than three trough lengths were used in distributing the concrete on the Vinery Building?

A. No, my recollection isn't that they used more than three troughs.

X Q. 182. Well, what is your recollection?

A. My recollection is that they used a longer trough on the Vinery Building than they did on the Lynnhaven.

X Q. 183. Who do you think would know more about that, you or Mr. Arthur L. Smith?

A. Personally I should think I would know more about it; Mr. Smith wasn't there during the entire time of the construction.

X Q. 184. Was Mr. Smith superintendent of construction of that building?

A. He was for a while.

X Q. 185. Did he leave your father's employ before that building was finished?

A. Yes.

X Q. 186. Who was superintendent after he left?

A. That was at the time my father went into bankruptcy and the building wasn't completed.

X Q. 187. Wasn't Mr. Smith there until your father went into bankruptcy?

[fol. 219] A. I think he was.

X Q. 188. What did he have to do with the building after that time?

A. He assisted my father in the construction of it.

X Q. 189. Do you mean that your father completed the building after he went into bankruptcy?

A. Yes, sir.

X Q. 190. What did you mean in your answer to X Q. 186, when you said that your father "went into bankruptcy and the building wasn't completed?"

A. The building wasn't completed until some years after that.

X Q. 191. How far along was the Vinery Building when your father went into bankruptcy?

A. Pouring the roof for the second floor; I think that is where it was.

X Q. 192. How many stories has this building?

A. This building has got—it was just as it stands now, the building was designed for 8 or 10-story construction, but on account of my father's failure it never was completed.

X Q. 193. I understand it is now a two-story building. Is that correct?

A. Yes, that is correct.

X Q. 194. Then when your father went into bankruptcy and Mr. Smith discontinued work on that building, practically all of the concrete had been poured, had it not?

A. No, I shouldn't say all of it. During the bankruptcy proceedings the job held fire for a certain period until the receivers could issue and negotiate certificates to complete the building. My father didn't know how long a period that would be and Mr. Smith accepted a better position or another position, I don't know which.

X Q. 195. What proportion of the concrete remained to be poured at that time?

[fol. 220] A. I think there was the third floor front.

X Q. 196. You said awhile ago, I thought, that it was a two-story building.

A. I didn't say the entire structure was two stories.

X Q. 197. After your work on the Vinery Building, when did you next work upon a building or other structure in which concrete was being used?

A. I think it was the Dickson Building. That was a different type of construction altogether. That was a steel frame construction instead of a concrete. It had concrete floors.

X Q. 198. Where was that building located?

A. Granby and Tazewell Streets, Norfolk, Va.

X Q. 199. How long was it that you worked on that building after you worked on the Vinery Building?

A. I think we started that building in 1908.

X Q. 200. How was the concrete placed, by wheelbarrows or chutes?

A. Both.

X Q. 201. Were the chutes stationary or could they be moved about?

A. They were movable.

X Q. 202. How were they supported, do you remember?

A. I think we had them supported on the same principle as we did the others. Only we could only use a short chute in that construction and had to do most of our work by wheelbarrows, as the steel frame was up to its roof before we could pour any concrete and the beams interfered with our using a long chute.

X Q. 203. You mean you used a single short chute?

A. Yes.

X Q. 204. And is it your recollection that it could be swung from side to side?

A. You could swing it as far as possible but you couldn't swing [fol. 221] it very far on account of the beams. As I said before we had to do most of it and did most of it by barrows.

X Q. 205. Have you had much experience since that time in which concrete was distributed and placed by means of lateral swinging chutes?

A. Yes, I have had some experience in that line.

X Q. 206. When was your last experience of that kind?

A. Well, the beginning of the war I was an inspector of building a drydock at the navy yard, and the government found they could use me to better advantage at other work and they put me on other inspection work. But I say, I have come in contact daily with concrete construction being distributed by chutes.

X Q. 207. Can those chutes be swung laterally?

A. Yes, sir.

X Q. 208. Such construction is quite common now, isn't it?

A. Yes, sir, it is much more modern.

X Q. 209. When the matter of the way in which the concrete was distributed on the Lynnhaven Hotel Building and the Vinery Building was first called to your attention by me, wasn't that the first time that you had thought about the same for years?

A. No, sir, it wasn't the first time I had thought of it. I had often thought of it in noticing the improvements that had been made.

X Q. 210. Just what improvements do you refer to there?

A. I mean in the olden days when building the Lynnhaven Hotel that they had built a wooden tower and we could only chute the concrete forty or fifty feet; nowadays they build steel towers and chute it four or five hundred feet.

X Q. 211. Are those the only improvements that you can think [fol. 222] of that have taken place, in the manner of distributing concrete, within the last thirteen or fourteen years?

A. No, sir, they are not. The most modern plants nowadays practically eliminate the wheelbarrow distribution, and when we used it we had to use both.

X Q. 212. As a matter of fact, are you sure that you are not mistaken and that you are not thinking of the latter day and present day practice of swinging the chutes laterally when you say that the first chute on the Lynnhaven Building and the Vinery Building could be swung laterally?

A. I am pretty positive that it could be swung laterally because

it would be practically useless to swing it in one position; too much expense.

X Q. 213. Your duties on the Lynnhaven Building did not require you to have anything whatever to do with the chutes and with the distribution of the concrete, did they?

A. No, sir, my duties on the Lynnhaven Hotel were to save the expense of the timekeeper and more to get the practical experience than anything else, as I was studying engineering at the time.

X Q. 214. What branch of engineering?

A. Mechanical.

X Q. 215. How often each day did you go up on the building when you were timekeeper in 1906?

A. I went up there I should say twice in the morning and twice in the afternoon on the average.

X Q. 216. Did you do that every day during the period of your employment by your father in connection with the work on that building during the year 1906?

A. So far as I remember, I did.

X Q. 217. How old were you in September, 1906?

A. I am thirty-five now and 1906 is 14 years from 35 makes me [fol. 223] 20 years old I should say. I will be 35 two months from now.

X Q. 218. Was your father in the habit at that time of conferring and consulting with you about his building operations?

A. Yes.

X Q. 219. In the course of your direct testimony you say that you saw Mr. Smith in the vicinity of the concrete distributing apparatus on the Lynnhaven Building. How often did you see him in that particular location?

A. All times during the day, he was here, there and everywhere.

X Q. 220. Did you see him up there each time that you went up on the building?

A. No, sir.

X Q. 221. According to your recollection, how long was Andrew J. Kerns employed on the Lynnhaven Hotel Building?

A. I couldn't say. He was there when I came on the job in 1906, and he was there off and on I should say until its completion, I guess. I don't know whether he stayed there until the job was completed or not.

X Q. 222. Was he there when you returned in February, 1907?

A. I think he was.

X Q. 223. Did he work on the Vinery Building?

A. I don't know whether he did or not.

X Q. 224. Will you describe a little bit more definitely your recollection as to what Kerns did or what his duties were on the Lynnhaven Building?

A. My recollection of Kerns' duties was that he had a gang of niggers moving the forms from the concrete and keeping the building in general clean, keeping the plaster off the doors.

X Q. 225. Wasn't he foreman of the concrete work?

[fol. 224] A. Not to my knowledge on this particular structure.

X Q. 226. Well, on what other structure was he foreman of concrete work?

A. I don't know that he was ever foreman of a concrete gang, although I have seen Kerns on numerous occasions standing around the mixer directing the laborers wheeling the sand and gravel.

X Q. 227. You remember seeing him around on the floor on which the concrete was being distributed in the Lynnhaven Building?

A. I don't remember seeing him up on the structure itself, but I have seen him around the mixer, as I said before, and inside the building removing the forms.

X Q. 228. Where were the forms which he was moving?

A. Off the columns and walls that had been poured.

X Q. 229. Didn't you see him up on the floors when he was attending to this work?

A. Yes.

X Q. 230. If troughs were used for distributing the concrete as you have testified, is there any reason why he shouldn't have seen them and been familiar with them?

A. No, there was no reason why he shouldn't have seen them. They were there for anybody to see, but unless he took an interest in the construction I don't suppose he paid any attention to it.

X Q. 231. In your answer to Q. 76, you say that Kerns "would come on the job some Monday mornings in not any too good shape." What was the trouble with him?

A. Kerns was in the habit of drinking, which I don't suppose he will deny.

X Q. 232. Then I suppose you mean that he came on the job with a "hang-over"?

A. Yes, sir.

X Q. 233. On these occasions, about how long is it your recollection that Mr. Kearns would be off the job?

[fol. 225] A. That is hard to tell; sometimes it would be two or three days.

X Q. 234. Do you know Mr. Wm. P. Baker?

A. Yes, sir.

X Q. 235. He has the reputation of being a reliable and trustworthy man, has he not?

A. Yes, sir.

X Q. 236. You have stated that it was some two months between the time that you first saw me, either in the summer or the fall of last year, and the second time that you saw me. Do you regard the other statements which you have made today on recollection as being as accurate or more accurate than your recollection as to the time between my visits?

Mr. Jones: Objected to as immaterial.

A. I never made any note as to the time. I said I thought it was about two months. It might have been more and it might have been less. I didn't pay any attention to it.

X Q. 237. Who was the photographer that you saw today?

A. Mr. Faber.

X Q. 238. You said during your direct examination that Mr. Arthur L. Smith had the hopper or bin built. How do you know he had it built?

A. While I was on the job my father and myself used to discuss the construction of the building nearly every night at home. I recall I asked him where he got his idea from and I think he told me it was some of Smith's work.

X Q. 239. How long was it after you went to work on the Lynn-haven Building in 1906, before, according to your recollection, the troughs were put into use?

A. I don't know; I think they were in use when I came there.

[fol. 226] X Q. 240. Have you any distinct recollection of seeing the trough when you first went to work as timekeeper on that building?

A. When I first went to work as timekeeper on the Lynnhaven, I didn't go into the structure for a couple of weeks.

Cross-examination closed.

Redirect examination by Mr. Jones:

R. D. Q. 241. Did you ever see Robert D. Preston on the Lynn-haven Hotel Building?

A. Yes, sir.

R. D. Q. 242. Do you recall about how long you saw him on the job before you went back to college in 1906?

A. He was there when I came there, a couple of months I should say.

R. D. Q. 243. Preston stated that he first came on the job early in September, 1906. What can you say as to this?

A. I can't say, but my recollection is that Mr. Preston was there when I came there.

R. D. Q. 244. Do you think you are mistaken or he is mistaken?

A. I am inclined to think Mr. Preston is mistaken, for this reason; he lived only a block away from the work and I think I used to go home with him in the afternoons, as I went up to see a young lady that lived right near by there.

R. D. Q. 245. Did you come home for a visit any time between September, 1906, and the late winter about February, 1907, when you left college?

A. I came home for a short while during the Christmas holidays.

R. D. Q. 246. Did you inspect the buildings at this time?

A. No, sir, I did not.

[fol. 227] R. D. Q. 247. Did you come home Thanksgiving?

A. No, sir.

R. D. Q. 248. Do you mean you may or may not, you don't remember?

A. I don't recall coming home Thanksgiving.

R. D. Q. 249. Please look at your answer to X Q. 126, and state if you are referring to this deposition.

A. Yes.

R. D. Q. 250. Was Smith's apparatus successful as used on the Lynnhaven and Vinery Buildings?

A. They were successful—the apparatus was successful at that time, but of course the use of it was limited. What I mean by that, you could not chute it over forty or fifty feet, if you call that successful.

R. D. Q. 251. What I want to know is, was it successful in what it did, regardless of the distance reached?

A. It was successful for the purpose it was used.

R. D. Q. 252. You have referred to a man standing on an elevated platform. On what was the platform supported?

A. It was supported on a brace from the tower or a brace from the floor I don't know which.

R. D. Q. 253. Please explain your answer to Q. 61.

A. The tower for the concrete was where the present elevator is now.

R. D. Q. 254. How was the chute supported so that it could swing as you stated in X Q. 204?

A. Supported by a pulley fastened on the end of the tower and fastened on the end of the chute.

R. D. Q. 255. Do you mean there was a rope connecting these pulleys?

A. Yes.

R. D. Q. 256. Please make a rough sketch indicating the floor plan of the Lynnhaven Hotel.

A. I have done so on a letterhead of the old Lynnhaven Hotel, [fol. 228] which is now the Southland. The picture of the Lynnhaven Hotel is in the upper left-hand corner, showing entrances on Granby and Freemason Streets, the main entrance being on Granby Street.

Mr. Jones: The notary is requested to mark this sheet Defendants' Exhibit 23, Tatterson Sketch.

R. D. Q. 257. You referred to modern chutes extending four to five hundred feet. How are such chutes supported?

A. By a series of cables.

R. D. Q. 258. How suspended?

A. From a tower at a great height, and a catenary suspension.

R. D. Q. 259. How long would a man in Mr. Smith's position be confined to one job of the size of the Lynnhaven Hotel for example? In other words, about how long does a modern building take to erect?

Mr. Anderson: Objected to as immaterial. The only thing in which we are interested here is how long it took to construct the Lynnhaven Building.

A. I should say nine months.

Recross-examination by Mr. Anderson:

R. X. Q. 260. My recollection is that you have testified that you went back to work on the Lynnhaven Building in February, 1907, when you returned from college; is that correct?

A. Yes.

R. X. Q. 261. Were they using the troughs then for distributing the concrete?

A. I don't think so, I think the building was pretty nearly completed so far as the concrete was concerned.

R. X. Q. 262. Were the troughs in place at that time?

A. I don't think they were.

Deposition closed.

[fol. 229]

January 19, 1921.

Met pursuant to adjournment at the office of Rebecca Bauer, 310 First National Bank Building, Cincinnati, Ohio.

Present: Arthur M. Hood, for plaintiffs; George Bayard Jones for defendants.

ALBERT E. CULP, another witness produced on behalf of defendants, being first duly sworn, testifies as follows:

Q. 1. Please state your name, age, residence and occupation.

A. Albert E. Culp; 55; live at 4221 Grove Avenue, South Norwood, Ohio; superintendent for the Ferro Concrete Construction Company.

Q. 2. Please explain the nature and extent of the business of this company.

A. They do general construction work, that is, meaning concrete work, concrete, brick work and various other branches. They do business on a very large scale.

Q. 3. In what different cities have you carried on your operations?

A. In the east, Rochester, New York; and in the south, Memphis, Tenn., Clarksville, Tenn. In fact, I can't remember all the cities they do business in, because there are so many of them.

Q. 4. Please state your own past experience and training.

A. I started in this business to learn the carpenter trade and that's what led up to this business. I have been in this business for about 36 years. George B. Mueller, contractors, Cincinnati; afterwards was in business for myself at Denver, Colorado. Afterwards with Ransome Concrete Company and then with the Cincinnati [fol. 230] Fireproofing Company, who afterwards changed their name to the Ferro Concrete Construction Company. I have been with this company for the past 20 years.

Q. 5. What Ransome do you refer to?

A. It was a company composed of Mr. Bliss of Columbus, Ohio, and Mr. Lyons of Dayton, Ohio, and Mr. Kennedy, Cincinnati. These men I mentioned organized this company and I am under the impression that Ransome allowed them to use his name. Ran-

some—I understand from others, was an engineer contractor in the east. I never met Mr. Ransome.

Q. 6. Is he the Ransome whose name appears on Defendant's Exhibit 21?

By Mr. Hood: Objected to as incompetent.

A. I couldn't say because I don't know the man—never met him.

Q. 7. Is the name Ransome well known or otherwise in the concrete world?

A. It naturally is. He is one of the pioneers.

Q. 8. Did you have anything to do with the construction of the Ingalls Building here in Cincinnati?

A. I did from the first floor until it was completed.

Q. 9. What type of building construction was it; state what you had to do with it?

A. Reinforced concrete; I was superintendent just of that branch of the work.

Q. 10. Was there anything unusual about this building?

A. Very unusual. It was the first reinforced concrete building that was ever built in Cincinnati.

Q. 11. About when was it built?

A. To the best of my knowledge in 1902 and 3.

Q. 12. What apparatus was used for distributing the concrete on the different floors of this building?

[fol. 231] A. On the second floor we used a spouting system; the concrete was elevated in a concrete hoist to the various floors and discharged from the mixer into a concrete bucket which was elevated and then discharged into a concrete hopper and then distributed from that point to various parts of the floor.

Q. 13. How was it distributed on floors other than the second?

A. Discharged into wheelbarrows and wheeled to the various parts of the building.

Q. 14. Can you produce or point out from the exhibits before you, any photograph of this building? I show you Defendants' Exhibits 5, 6 and 10, and ask if you can identify them?

A. I do. On this Exhibit 6 I am on the lower left-hand corner.

Q. 15. You mean that is your photograph?

A. Yes.

Q. 16. What distributing apparatus do these photographs represent?

A. They represent part of the concrete hoist. Also the receiving hopper, and several sections of the spouting system.

Q. 17. Can you identify Defendants' Exhibit 7?

A. I certainly do. It is a photo of the building up to the second floor, or Exhibit 5. I refer to figure No. 14, Ingalls Concrete Steel Office Building during erection.

Q. 18. How many sections of chute are shown in Exhibit 5?

A. Approximately three.

Q. 19. Where is the concrete being deposited in that exhibit?

A. Over the front entrance door, which is located on Fourth St.

Q. 20. What is the other street?

[fol. 232] A. Vine Street.

Q. 21. Aside from your memory, is there anything in the photograph to help locate the building?

A. The old Pike Opera House directly south of it.

Q. 22. Is the opera house still there?

A. It is not. It was completely burned down during the operations on the second floor of the Ingalls Building.

Q. 23. When you wish to distribute the concrete to some point other than over the front entrance, what would you do?

A. Move them around by hand. Move the chutes.

Q. 24. How would you do this?

A. By hand with a few men.

Q. 25. On what were the chutes supported?

A. On a trestle or a cross arm.

Q. 26. About how many of them were there?

A. One to every ten-foot section.

Q. 27. Of what were these sections made?

A. Made of a black metal, or steel.

Q. 28. About how many of these chutes did you have on this second floor work?

A. Approximately ten or more.

Q. 29. How many of them did you use at one time?

A. About the same number.

Q. 30. In the photograph in the Engineering News, Exhibit 7, approximately three sections are shown according to your previous answers. What do you mean by your last answer?

A. I used ten or twelve of these sections which were about ten feet long to a section.

Q. 31. I mean did you always use all of them?

A. I did not. It all depended upon the distance we were chuting this concrete.

Q. 32. About what proportion of the total floor area was reached by these chutes in depositing the concrete?

[fol. 233] A. About 75 feet.

Q. 33. My question called for area.

A. Well, about 2,500 square feet.

Q. 34. What I meant was, did you reach a quarter of it, a half of it, three-fourths or what proportion?

A. The entire area was 5,000 feet, for this floor.

Q. 35. In other words, you deposited about half the concrete on this floor by means of the chutes, is that correct?

A. Yes, in one operation.

Q. 36. How was the other half deposited?

A. In the same manner.

Q. 37. Please explain what you mean by one operation.

A. We poured the entire floor in two operations.

Q. 38. I don't quite understand what marked the intervals between the two operations. Do you mean you would only have to move the chutes once?

A. Why, during this operation we were just as apt to move the chutes a dozen times or more.

Q. 40. What were the approximate dimensions of the floor area and how high was the building?

A. 50 x 100—sixteen stories high, all of which were of reinforced concrete.

Q. 41. Please trace the progress of the concrete from the mixer to its final place of deposit.

A. From the basement to the second floor and then to an elevated floor above the main entrance of the building.

Q. 42. Are you referring now to Exhibit 5?

A. I am.

Q. 43. You mean to say that the concrete would flow down the very flat slope of the chutes shown in this exhibit?

A. It did.

[fol. 234] Q. 44. Would the concrete that was ordinarily mixed on other jobs in 1902 flow down such a gentle slope?

A. Well, that's a question. That would be a question because at that time there was very few reinforced concrete buildings; however, there's no reason why this concrete shouldn't flow through these chutes if it was mixed properly with the right consistency of water.

Q. 45. What was the consistency of this concrete as compared with the standard practice of that period?

A. It was a wet concrete. It was wet concrete that we used for floor work; the column mix was much dryer.

Q. 46. For what purpose were the wheelbarrows used as shown in photograph D, Exhibit 10?

A. This was a column mix to be used in the columns.

Q. 47. Why did you not use chutes for dropping the concrete into the column forms?

A. They would not permit of it. The inspector for the owner and architects would not permit it because it was too wet of a mix for that purpose.

Q. 48. You mean it was not considered safe?

A. Well, it wasn't considered safe because at that time it required too long of a time to acquire its proper strength.

Q. 49. How do you deposit concrete in column forms today?

A. The work that is under my charge and some of our other work which I have seen, is done principally the same way as we done it at that time. I mean we use a chute and then wheel it and dump it into these column forms. The reason is that it is more economical. The company has a dozen and a half or so superintendents.

Q. 50. Do you recall the taking of any of these photographs?

A. I do.

Q. 51. Who took them?

[fol. 235] A. Yes. Charles H. Longley of Cincinnati.

It is hereby stipulated that opposing counsel interviewed Charles H. Longley, the photographer, this morning. It is further stipulated if said Longley were called as a witness he would testify that he took these photographs, Defendants' Exhibits 5, 6 and 10 in the winter of 1902-3, that he recalls the use of chutes during the early

part of the work on this building but not later, and that the said photographs are a correct representation of the structure and apparatus used at that time, and that the original plates have been broken.

Q. 52. Do you recall anything about the Engineering News article of July 30, 1903, Defendants' Exhibit 7?

A. Why, yes, I do. We had a copy of it in our office. I read the full particulars of the article.

Q. 53. What was done with the tower or hoist on this building as the building became higher?

A. Additional sections were put on it.

Q. 54. What was done with the hopper?

A. Removed from floor to floor.

Q. 55. How was the hopper supported?

A. On the tower and supports at the end of the hopper, resting on the floor forms, or on the concrete.

Q. 56. Was there any way of controlling the flow from the hopper to the upper chute section shown, for example, in Exhibit 6?

A. Yes, by a gate operated by a laborer.

Q. 57. Where did the laborer stand?

A. He would sit on a plank supported on this hopper.

Q. 58. At the time this building was built, were you familiar with the use of booms for any purpose?

A. Yes.

Q. 59. Is one shown in Exhibit 5?

A. Yes, there is. It is a boom on a stiff leg derrick.

[fol. 236] Q. 60. Who got up this chuting rig shown in this photograph?

A. Mr. Robert P. Anderson, vice president of the company, and myself.

Q. 62. Mr. Anderson, is he living?

A. He is not. He died about eight years ago.

Q. 63. After you finished pouring this second floor, what concrete distributing apparatus did you use on the remaining floors?

A. We used the same apparatus with the exception of a spouting system. We used wheelbarrows, or, in other words, it was a Ransome buggy, a two-wheel Ransome buggy, shown in Exhibit 10.

Q. 64. Are you the Albert E. Culp, who executed an affidavit in this suit August 5, 1920?

A. I am.

Q. 65. Have you read this affidavit recently?

A. I have.

Q. 66. Is it an accurate statement of facts relating to this building?

A. It is, except this apparatus was used two weeks instead of two months; Figure 1 of the sketch, the hopper in this sketch shows no support at the end.

Q. 67. You also state that this apparatus was suggested by Robert Anderson of your company; is that correct?

A. That's correct.

Q. 68. Why did you change to the wheelbarrows or buggies on the floors above the second floor?

A. We found it more economical.

Q. 69. Do you keep cost records of your various jobs?

A. Daily, and also weekly.

Q. 70. What are your present conclusions as to the relative economy of distribution by carts and by chutes under various conditions? [fol. 237] A. That all depends upon the size of your building and also the yardage. It is principally the length of a building. We find it is more economical to wheel concrete than it is to chute it in many cases. It is a very costly proposition to put in a chuting system, and taking it out.

Q. 71. What effect, if any, did the floor area of the Ingalls Building have on your conclusions with reference to the use of wheelbarrows?

A. Why, as I said before, we found it more economical to wheel it than chute it.

Q. 72. Would you say the floor area of the Ingalls Building was large or small? From your standpoint?

A. Small, very small.

Q. 73. With the length of chute used on the second floor of the Ingalls Building, was any difficulty experienced in having the workmen carry the chutes around to different positions?

A. In a manner, yes.

Q. 74. What do you refer to?

A. In changing the positions.

Q. 75. You mean they were too heavy to be lifted?

A. No, they were changed so often.

Q. 76. How does the length of the upper section of chute or trough used in modern apparatus for spouting from a tower, compare with the length of the upper section of chute used by you in 1902 on the Ingalls Building?

A. Well, they are about from three to four hundred per cent. longer; the new apparatus.

Q. 77. Was your Ingalls Building chuting apparatus successful in use?

A. It certainly was.

Q. 78. Have you ever since used in your work chutes supported on horses or trestles?

A. We have.

[fol. 238] Q. 79. Are any of the original steel chutes used on the Ingalls Building still in existence?

A. One or two sections are at our warehouse. I have seen them recently.

By Mr. Jones: In view of the size and weight of these sections, they are not offered in evidence, but arrangements have been made for the opposing attorney to inspect them if he so desires.

Q. 80. Do you know L. J. Mensch?

A. I know of him.

Q. 81. Do you know anything about him in connection with this building?

A. I do not.

Q. 82. Do you know where he was located at the time it was being built?

A. I do not.

Q. 83. Did you ever hear of his being in Cincinnati?

A. I understood he was at the time.

By Mr. Hood: Objection—all hearsay.

Q. 84. Was there any particular comment regarding the Ingalls Building at the time or after it was built?

A. My understand of the matter was that the building inspector would not give them a permit to build this building. I was not in Cincinnati when this building was started and can't remember the various comments that were made at the time.

By Mr. Hood: The statement of the witness relative to the building inspector is objected to as hearsay.

Q. 85. How did this building compare in height with other reinforced concrete buildings previously built in the United States?

A. There were no other buildings ever built in the United States [fol. 239] of this character at that time, of entirely reinforced concrete construction.

Q. 86. A. I understand your previous answers, your decision to use wheelbarrows or carts on the floors above the second floor of the Ingalls Building, was based entirely on considerations of economy; is that correct?

By Mr. Hood: Objected to as leading.

A. That is correct.

Q. 87. What is the practice today with reference to the use of wet concrete as compared to the prevailing practice about 1902, for example?

A. At that time the engineers—concrete engineers of the United States were all in favor of a very dry mixture. Today it is just the reverse, with a medium wet mix.

Q. 88. How did the mixture used on the Ingalls Building compare with the standard practice of that period?

A. There was so very little work done at that time that nobody knew. It was a difference of opinion between some of the leading concrete engineers and myself as to the mixture of this concrete whether it was to be a medium dry or a medium wet.

Q. 89. On large building jobs today, that is of large area, where chutes are used, how are they usually suspended?

A. They are suspended by—in some cases by a main chute line from one tower to the other and these chutes are suspended by ropes which supports the chutes. In other instances where the chutes are supported by poles from section to section, that is, where they don't use a main chute line. In some cases the first section of the chutes are supported by a boom resting on the concrete hoist.

[fol. 240] Q. 90. Were the Ingalls chutes closed pipes or open troughs of steel?

A. Open troughs.

Q. 91. Please make a rough sketch showing one arrangement of the chutes on the Ingalls Building, to illustrate the manner in which the concrete could be made to flow in the various directions?

A. I have done so.

Mr. Jones: The sketch is marked Defendants' Exhibit 24—Culp's Sketch.

Q. 92. In Exhibits 6 and 10, what are the objects that look like blocks or obstructions in the upper end of the upper chute?

A. It is a part of the side of the box—projection over the end.

Q. 93. Is it an obstruction?

A. It supports a small chute entering into the metal chute. In other words, these boards that project beyond the end of this hopper has never been cut off square with the hopper.

Q. 94. The question is, is it an obstruction?

A. It is not. It is just a little wooden snout that fits down into the upper end of the first metal chute.

Q. 95. In your sketch, Exhibit 24, you show the first section of chute projecting not exactly at a right angle from the hopper, but at a slight angle away from a right angle. What was the arrangement at the upper end of this upper chute that permitted this slight turning?

A. The arrangement of supporting this and turning this chute is by a piece of cable.

Q. 96. What is this apparent support which the upper end of the chute seems to overlap slightly in the picture?

A. It seems to be supported on the support that supports the hopper and this cable that supports this chute also holds this chute [fol. 241] in a position from slipping off of support referred to.

Q. 97. The "support that supports the hopper" is the vertical support you have previously referred to as supporting the outer end of the hopper; is that it?

A. That is it.

Q. 98. About how long would you say it took to place the reinforcing steel and pour the floor slabs for the second floor?

A. About five days.

Q. 99. About how long would it take including the pouring of the columns?

A. About 8 or 10 days.

Q. 100. In booms which you have seen used prior to 1905 or 6, for example, has the lower end of the boom always remained at a fixed height on its support?

A. Yes.

Q. 101. Have you ever seen booms secured to towers prior to that date?

A. I have.

Q. 102. And have you never seen an arrangement by which the lower end of the boom and hence the entire boom could be raised or lowered on the tower?

By Mr. Hood: Objected to as leading.

A. I have.

Q. 103. Do you know anything about the construction of the American Book Company's Building, Cincinnati?

A. I do.

By Mr. Hood: Objected to as relating to a structure not pleaded.

Q. 104. Do you recall how the concrete was placed on this building?

A. I certainly do, because I supervised that work from start to finish. We had a tower 65 feet high with a mast and boom on [fol. 242] top of same and hoist the concrete from the station which was in the basement by means of a large bottom drop bucket. It was distributed around the floors by means of this bucket and placed in position.

Q. 105. Was it always dropped directly from the bucket into the forms?

By Mr. Hood: It is understood that the previous objection that the American Book Company Building has not been pleaded, shall be considered as entered, without repetition, to all questions and answers, relating to it.

A. Why, not in all cases. It dropped in a portable hopper and in some cases wheeled from there.

Recess.

Q. 106. You have referred to the expense of the modern equipment for distributing concrete. On what are your conclusions based?

A. Well, the extra expense of chuting concrete that you got to increase the height for your towers in order to give the chutes sufficient pitch so the concrete will flow. There are various other reasons that you've got to support and guy your towers, whereas, when you wheel your concrete these guys in the height of the towers are not necessary.

Q. 107. Was the American Book Company's building built before or after the Ingalls Building?

A. After. About three months.

Q. 108. You have referred to your familiarity with the use of booms. Have you ever personally used a boom on a tower which was also used for elevating concrete?

A. We have.

Q. 109. Was such instance prior to 1907?

[fol. 243] By Mr. Hood: Objected to as leading.

A. Yes, in 1905 we used it.

Q. 110. How was the concrete elevated in such cases?

A. The same as it is today.

Q. 111. You mean by a hoist bucket in the tower? Dumping into a hopper?

A. Yes.

Q. 112. What did you use the boom for in that case?

A. To hoist steel and form work.

Q. 113. Was it necessary to guy the tower in any way?

A. Guy is to use guy lines on it, but we just braced it or anchored it back to the building.

Q. 114. Were Ransome towers ever guyed by cables?

A. Never saw a Ransome hoist.

Q. 115. Where did you get your hoists?

A. We made them ourselves out of wood. But we used the Ransome buckets, and their hopper gates.

Q. 116. Do you know whether there was any discussion in your Company about applying for a patent on the apparatus which you say was worked out by Mr. Anderson and yourself for distributing concrete through a series of chutes on the Ingalls Building?

By Mr. Wood: Objected to as immaterial.

A. Not to my recollection.

Cross-examination by Mr. Hood:

Q. 1. Mr. Culp, in Plaintiff's Exhibit No. 10 there appears to be two pieces of 2 x 4 which are crossed upon themselves so as to form a crotch at their upper ends, and in this crotch the upper end of the first metal chute section is supported. That is right, isn't it?

A. That is correct, but in addition to this it looks as though from this photo that it takes an extra bearing on the 2 x 4 on the end of [fol. 244] the tower which supports the hopper.

Q. 2. You haven't any distinct recollection of this particular construction except as it is refreshed by the photograph you have testified from?

A. No, I have not.

Redirect examination by Mr. Jones:

Q. 1. As you had this apparatus constructed, was it the plan to have the upper end of the first chute supported so that its weight would be borne by the hopper?

By Mr. Hood: Objected to as leading.

A. Yes.

Q. 2. Then, as I understand your several answers, this upper end was supported in part by the rope and in part by the frames supporting the outer end of the hopper; is that correct?

A. Yes.

Q. 3. When you arranged two adjacent chutes at an angle to each other as shown in your sketch, Exhibit 24, how did you support the respective ends?

A. By a fork constructed out of 2 x 6 lumber and the chutes rest in this crotch on this support.

Q. 4. What prevented the concrete from over-chuting the trough and part of it spilling on the floor?

A. By means of a panel fastened to the side of the hopper which projected above the chute.

Q. 5. Do I understand from your answers to Qs. 35 and 36 as meaning that the entire second floor was poured by means of these chutes?

A. Yes.

Q. 6. And with the exception of the columns which were poured from wheelbarrows, all of the concrete flowed from the chutes on to the forms; is that correct? I refer to the second floor.

[fol. 245] A. Yes, that is correct.

Q. 7. When the concrete had been poured on all parts of the floor except near the tower, how many sections of chutes would you use in pouring the remaining area near the tower?

A. One section.

Q. 8. Do contractors and superintendents generally in positions similar to yours, have any financial interest in the outcome of this litigation?

By Mr. Hood: Objected to as incompetent.

A. Not as I know of.

Q. 9. What is the practice of contractors with reference to the cost of equipment of this general character as purchased today? I mean, who pays for the apparatus eventually?

By Mr. Hood: Objected to as immaterial.

A. That all depends on the contract he's got—whether that is done on top price or whether this equipment is on a rental basis or not.

Q. 10. The contractor is usually reimbursed for the cost of such equipment, either directly or indirectly, is he not?

Mr. Hood: Objected to as leading and immaterial.

A. That's a question. When you figure on building of course you take your equipment into consideration in figuring your price.

Q. 11. Under what conditions did you use the two sections of chute shown in Exhibit 10?

A. To distribute concrete to the barrows or carts for columns and floors, if necessary.

Q. 12. What do you mean by "floors, if necessary?" I understood that the second floor was poured entirely by chutes except close to the tower; is that correct?

[fol. 246] A. Well on this particular job we used this for columns only.

Q. 13. On the upper floors did you ever use any of the chute sections for running the concrete from the hopper into the carts?

A. No, we did not. We lowered the hopper to a given height

from the floor and discharged this concrete directly into the barrels.

Q. 14. Is the X shaped brace of Exhibit 10 shown leaning against the juncture of the two chutes the same or different brace from what is shown supporting the lower end of the chute in Exhibit 6?

A. Yes, that's practically the same.

Q. 15. In other words, then, you could vary the angle of inclination of the chutes by changing the supports; is that correct?

A. Yes. After chuting a given distance and getting close in to the tower, these other chutes were removed.

(Witness refers to Exhibit 6, the chute lying on the floor in order to concrete the floor close in to the hopper.)

Q. 16. In Exhibit 6, are the reinforcing bars in place on the floor ready for the concrete?

A. No.

Recross-examination by Mr. Hood:

Q. 1. With the arrangements shown both in Defendants' Exhibit No. 6 and Defendants' Exhibit No. 10, a part of the weight of the first metal chute section, is supported by the crotch formed by the two cross 2 x 4s, to which I have already called your attention; that is right, isn't it?

A. That is right.

Q. 2. And these cross 2 x 4s are supported at their lower ends by [fol. 247] the forms for the floor of the building; that is right, isn't it?

A. That is right.

Deposition closed.

Albert E. Culp.

It is stipulated and agreed that if George Botsung were called to testify on behalf of the defendants and examined, he would testify that he worked as a carpenter on the Ingalls Building, became familiar with the construction and use of the chuting apparatus, and that he would corroborate defendants' witness, Culp, both as to his direct and cross-examination, in all particulars relative to the construction and use of said chuting apparatus.

Chicago, February 2, 1921.

Met pursuant to agreement.

Present, as before.

JEROME C. ALDERMAN, a witness called on behalf of defendants, being first duly sworn, deposes and testified as follows in answer to interrogatories by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Jerome C. Alderman; thirty-seven years; Villa Park, Illinois. I am a civil engineer with the Great Lakes Dredge & Dock Company.

Q. 2. About how long have you been with this Company?

A. Since May 15, 1909.

Q. 3. By whom were you previously employed?

A. By Fraser & Fox, consulting engineers, Cleveland, Ohio.

Q. 4. Are you familiar with the use of chutes or troughs for dis-[fol. 248] tributing concrete? If so, state the first instance that you recall of such use.

A. The first instance that I recall was on the construction of a concrete dock built by the Great Lakes Dredge & Dock Company for the Upson Nut Company on the Cuyahoga River, at Cleveland, Ohio. This was during the summer of 1908.

By Mr. Hood: The answer is objected to as relating to matter not properly pleaded.

By Mr. Jones: It is noted that the amendment to the answer, dated February 2, 1921, has been consented to by counsel for plaintiffs, but without waiving the right to imposition of terms by the court.

Q. 5. Please describe this apparatus more fully, producing photographs, if you have any.

By Mr. Hood: It is understood that the above noted objection shall be considered as entered wherever applicable to the testimony of this witness without repetition on the record.

A. This equipment consisted of a deck scow, on which was mounted a concrete mixer having a gravel and sand hopper overhead. At one end of the mixer was mounted a revolving crane, which picked up the sand and gravel carried in pockets on one end of the deck scow. Concrete was discharged from the mixer through a metallic chute, which was, in turn, supported by a boom on the platform over the mixer. In discharging the concrete the boom was moved from side to side, permitting concrete to be discharged into the forms by moving the chute from one side to the other, thus distributing the concrete over a greater area than if it was discharged directly from the mixer to the forms.

[fol. 249] By Mr. Jones: The photograph produced by the witness is marked Exhibit 17, Photograph F.

Q. 6. What is the object to which I point?

A. That is a concrete chute. Additional chutes were placed on the end of the chute, which was made fast to the boom for the purpose of distributing concrete over a greater area. I am referring to the chute shown in the picture upside down and which is projecting over the rear of the form work, opposite the mixer.

Q. 7. How many sections of chute were employed as a maximum?

A. On this particular job there were never over four chutes used in addition to the chute on the mixer.

Q. 8. Do you mean that on this job you sometimes used as many as four sections?

A. As many as four sections, yes.

Q. 9. In such cases how were the three outer sections supported?

A. They were supported either on horses or made fast with lines to the mixer proper, in which case the chutes were held together by pieces of timber, which extended the original chute on the mixer, making all sections as one unit.

Q. 10. Were these chute sections always arranged in alinement with each other, or what was the arrangement?

By Mr. Hood: Question objected to as leading.

A. When the chutes were made fast together they were in alinement, and when they were used on horses they were at an angle with the chute on the mixer, the chute on the mixer being the one shown on the photograph as attached to the mixing plant, the boom of the mixing plant.

Q. 11. When was this picture taken?

A. In the month of August—August 7, 1908.

[fol. 250] Q. 12. What is your independent recollection, aside from the date on the photograph?

A. The way I fix this date in my mind is the fact that I had charge of this job the summer following my marriage, my marriage being on November 16, 1907.

Q. 13. What name appears upon the side of the wooden enclosure in the photograph?

A. Great Lakes Dredge & Dock Company, Travelling Derrick No. 14.

Q. 14. Do I understand that you personally saw this concrete distributing apparatus in use?

A. I personally saw this equipment in use on this job, I having had charge of the work for the owners' engineers.

Q. 15. Can you produce any other illustration of this apparatus?

A. Copy of this photograph is shown in the Engineering Record, dated April 3, 1909, page 424, the lower picture on the page being the one referred to. This photograph is shown in connection with an article entitled "A Heavy Concrete Dock on the Cuyahoga River, Cleveland." This article starts on page 423, and mentions that the contract was carried out by the Great Lakes Dredge & Dock Company, and that the plans and specifications were prepared by Fraser & Fox, consulting engineers, of Cleveland, and that the construction work was carried on under the supervision of Fraser & Fox.

By Mr. Jones: A photograph of this page 424, referred to, is marked for identification "Defendants' Exhibit 25, Photograph of Page 424 of the Engineering Record of April 3, 1909."

It is stipulated that if a competent witness were called to testify, he [fol. 251] would testify that the Engineering Record of April 3, 1909, containing the article referred to was published on said date.

By Mr. Hood: The Exhibit, No. 25, and the stipulated testimony noted above are objected to as wholly irrelevant and immaterial, on the ground that it is subsequent in date to the date of application on

which the patent in suit was issued. Plaintiffs object to encumbering the record through publications and testimony of this character.

Q. 16. Why is the lower end of the suspended chute in the photograph flared outwardly?

A. The object of the flare in the chute, as shown in the photograph, is to permit the chute to be moved sidewise, either one way or the other, without spilling concrete from the mixer over the side of the chute, this flared portion being adjusted underneath the discharge of the mixer.

Q. 17. Have you any other records to identify the date of this job?

A. I have here a duplicate of the contract, the same being a copy of the original contract, the date of this contract being April 16, 1908. I have also various letters, one in particular dated March 27, 1908, from John E. Grady, who was Division Engineer of the Great Lakes Dredge & Dock Company stationed in Cleveland, this letter being to the home office in Chicago, and being received by them on March 28, 1908, the letter stating that the Great Lakes Dredge & Dock Company were awarded the contract for the construction of the dock mentioned.

By Mr. Jones: The correspondence and the duplicate contract are offered to Mr. Hood for inspection.

Q. 18. Where is John E. Grady?

[fol. 252] A. He is not employed by this company at this time.

Q. 19. Where did you get these various papers you have referred to?

A. The papers mentioned are a part of our contract files pertaining to the job in question, and were taken by me from the vault in our office today.

Q. 20. Are you willing to turn these and other papers which you have with you over to us?

A. I have no authority to allow these papers out of my possession.

Q. 21. Who took the picture, Photograph F?

A. That was taken by the Newman Studio, Cleveland, Ohio.

Q. 22. Do you recall the taking of any photographs on this job?

A. I recall that photographs were taken during the construction of this job on various dates, these photographs being for the purpose of showing the progress of the work.

Q. 23. Where did this particular photograph come from?

A. That came from our Cleveland office. This same photograph No. 1601, Negative A A 8-7-08, appears in an album kept in our Chicago office, and is numbered 52.

Q. 24. What is the practice of the Great Lakes Dredge & Dock Company with reference to taking and preserving photographs?

Objected to as incompetent so far as any issues involved in this case may be involved, because the witness became associated with the Great Lakes Dredge & Dock Company subsequent to the date of application upon which the patent in suit was issued.

[fol. 253] Q. 25. About how long were you employed on this Upson Nut Company dock in 1908?

A. About two months.

Q. 26. About what proportion of the concrete dock work did you see carried out?

A. About fifty per cent of the entire project.

Q. 27. Please refer to "Defendants Exhibit 17" and state if you are familiar with any of the apparatus illustrated therein.

A. I have seen apparatus of this type shown in Photographs C and D.

By Mr. Hood: Objected to as immaterial and irrelevant, first, because no date is given, and, second, because Exhibits C and D of Defendants' Exhibit 17 carry upon their faces dates subsequent to the date of filing of the application on which the patent in suit was issued.

Q. 28. When and where did you see such apparatus?

A. Similar apparatus was used by our company in the construction of a dock for the Pennsylvania Railway Company at Erie, Penn., in the spring of 1910.

By Mr. Hood: Objected to as irrelevant and immaterial as relating to a structure and use subsequent to the date of application on which the patent in suit was issued. Plaintiffs protest against encumbering the record with irrelevant and immaterial evidence of this character.

Q. 29. About how long has your Company used such apparatus?

By Mr. Hood: Objected to as irrelevant and immaterial, because the witness has no knowledge, so far as the record shows, of any operations of the character inquired about prior to January 21, 1909, the date of filing of the application upon which the patent in suit was issued.

[fol. 254] A. I have seen such apparatus used by the company for the past ten years.

Q. 30. Who is Christie, whose name appears on these photographs C and D, Exhibit 17, to which you have just been referring?

A. Christie was a commercial photographer, who is now dead, who during his life took various photographs of our different jobs, to show the progress of the work.

Q. 31. Where are the original Christie plates?

By Mr. Hood: Objected to as immaterial and irrelevant, on the ground that evidence already in shows that Christie plates were produced subsequent to January 21, 1909.

A. At the time of Mr. Christie's death his widow offered to sell these original plates to the Great Lakes Dredge & Dock Company, but her offer was rejected, and I have no knowledge at this time of the whereabouts of these plates.

Recess.

Q. 32. In what city were you located when you were first employed by the Great Lakes Dredge & Dock Company?

A. I resided at that time in Cleveland, Ohio.

Q. 34. And about when did you come to Chicago?

A. I came to Chicago at various times after 1909 on visits, but came to Chicago in August, 1915, in charge of construction work, and remained here for approximately nine months. I later returned to Chicago in October, 1916, and have been here since that time.

Q. 35. Can you produce any working drawings or blueprints of the concrete-distributing apparatus used in Cleveland in 1908, and illustrated in Exhibit 17, Photograph F?

A. I have been unable to locate any drawings of this particular [fol. 255] plant or of other plants constructed later for mixing and placing concrete.

Q. 36. There has been some previous testimony regarding concrete-distributing apparatus used by your company in Chicago in 1909, as shown by Photograph B, Exhibit 17. In the absence of drawings, how do you account for the use of somewhat similar apparatus in two different cities?

By Mr. Hood: Objected to as irrelevant and immaterial, as relating to structures and occurrences subsequent in date to January 21, 1909.

A. Our general manager took an active part in the handling of our construction work in connection with jobs in various cities, and he usually suggested that a certain plant be constructed, and sometimes sent men to construct this plant from one city to another. Further, our various superintendents were transferred from time to time from one city to another, and carried out ideas in plant construction that they had gained on the various jobs upon which they were employed.

Q. 37. What is the practice of your company with reference to making drawings and blue-prints of your concrete-handling plants?

A. We do not make a practice of making any drawings, and I know of no drawings in our files on concrete-handling plant, primarily for the reason that this plant is usually made up of portions of other plants, and is assembled for use on certain jobs, and afterwards again dismantled.

Q. 38. What plant are you referring to?

A. I refer to our scow mixers, hoisting and distributing towers and chutes, as well as our car-mixing plants, consisting of concrete mixers, material hoppers, towers, and chutes mounted on railroad cars.

[fol. 256] By Mr. Hood: The answer is objected to as irrelevant and immaterial, on the ground that the knowledge of this witness as to the practice at the Great Lakes Dredge & Dock Company in the matter inquired about has not been shown to antedate May 15, 1909.

Q. 39. You stated that you were unable to locate any drawings of the Upson Nut Company's dock apparatus; how far back did your search extend?

A. My search of our drawings files extended back to drawings made in 1907.

Q. 40. To what kinds of apparatus do the drawings relate that you do make and keep in the files?

A. Deck scows, dump scows, hydraulic and dipper dredges, drill boats, and in some cases pile drivers.

Q. 41. Who was the designer of the distributing apparatus of Exhibit 17, Photograph F, used on the Upson Nut Company's dock?

By Mr. Hood: Objected to as incompetent, the record showing that this witness was not employed by the Great Lakes Dredge & Dock Company in 1908.

A. It was my understanding that that particular plant was suggested by our general manager, Mr. T. C. Lutz, of the Great Lakes Dredge & Dock Company.

By Mr. Hood: The answer is objected to as hearsay.

Q. 42. Are you familiar with the apparatus of the photograph in Album 52 of the Great Lakes Dredge & Dock Company, to which I call your attention?

A. I am. This apparatus consists of a concrete mixer mounted on a deck scow, over which was constructed material bins, and above which was constructed a movable boom supporting a spout, into [fol. 257] which concrete was discharged from the mixer into the forms. It is the same apparatus as Photograph F.

By Mr. Hood: Objected to as relating to matter not properly pleaded.

By Mr. Jones: A reproduction of this photograph is marked Exhibit 17, Photograph G.

Q. 43. Please explain what the long boom and the associated parts are used for in Photographs F and G.

A. The long boom shown in these photographs is the boom on the revolving crane previously described as a part of this equipment, and is used in connection with a clam shell bucket to take material from scows and deposit same in the bins over the concrete mixer, and is not a part of the mixer or chutes in connection with the plant, but is mounted on the same scow with the concrete mixer. This is perfectly clear as shown on Photograph F, Exhibit 17.

Q. 44. What other photographs can you produce of apparatus used by your company to your knowledge for distributing concrete through chutes or pipes?

A. A photograph numbered Negative 18, dated October 10, 1913, showing a floating concrete mixing plant used in the construction of a concrete dock constructed for the Hocking Valley Railroad at Toledo, Ohio. This photograph appears in our Album No. 52. Also a photograph numbered 2133-CC, dated 5-25-1910, showing a float-

ing concrete plant used in the construction of a concrete dock for the C. H. & D. Railway Company at Toledo, Ohio, this appearing in our Album No. 53.

By Mr. Jones: Reproductions of these photographs are marked "Photographs H and I," respectively, as part of Exhibit 17.

Q. 45. In Photograph I, how is the chute supported?

A. This chute was supported by a block and tackle, one end being made fast to a timber projecting from the top of the mixer.

Q. 46. Of what material was the tower constructed in Photograph H?

A. This tower is constructed of structural steel.

Q. 47. Trace the progress of the concrete from the mixer to the forms.

A. Concrete discharged from the mixer into a bucket at the bottom of the tower. When the bucket was filled it was elevated towards the top of the mixer, and automatically dumped into a hopper, shown on the front of the tower, from whence it flowed through the spouts, which were supported by a boom pivoted near the front of the tower, this concrete discharging into the forms.

By Mr. Hood: The answer is objected to on the ground that it relates to a structure subsequent in date to the date of application upon which the patent in suit was granted.

By Mr. Jones: This and similar testimony is offered to show continuous use and development by this company of the earlier forms of apparatus evolved by it prior to the filing date of the Callahan patent.

By Mr. Hood: Such "use and development" does not make the evidence either material or relevant.

Q. 48. What was the purpose of the boom in this apparatus and of the block and tackle in Photograph I?

By Mr. Hood: The immediately preceding objection is repeated.

A. Their use was to permit of a longer chute, and in addition to permit moving of the chute from side to side, in order to distribute the concrete in the forms.

[fol. 259] Q. 49. Did the hopper in Photograph H always remain at the same height on the tower?

A. It did not. This hopper having a means of being raised or lowered, in order to give the chutes sufficient pitch to permit a free flow of the concrete.

By Mr. Hood: Attention is called to the fact that the structure referred to by the witness in the last answer is subsequent in date to the date of the application upon which the patent in suit was issued.

Q. 50. Where did these photograph albums come from that are before you on the table, including those to which you have referred? In this connection, I note that you have not answered Q. 24.

By Mr. Hood: So far as the repetition of Q. 24 is concerned, the question is objected to as incompetent so far as any issue in this case may be involved, the witness not having had any connection with the Great Lakes Dredge & Dock Company prior to May 15, 1909.

A. These albums were taken from the Chicago office of the Great Lakes Dredge & Dock Company, who make a practice of taking photographs of their construction work from time to time, to show progress of the work.

Q. 51. Are you familiar with the photograph in album 51 which I show you?

A. I am familiar with this photograph, I having visited this job at various times.

By Mr. Jones: A reproduction of this photograph is marked "Photograph J," to be included in Exhibit 17.

Q. 52. In this photograph I note that the chute is open at the top; is it the same in this respect as the previous chutes you have been referring to in Photograph H and I, for example?

[fol. 260] By Mr. Hood: Question objected to, on the ground that no showing has been made as to the date when either of the photographs inquired about or of the apparatus which it purports to illustrate. It is noted that the photograph bears date April 2, 1914, and, manifestly, if this is the correct date, all testimony relating to the same is immaterial and irrelevant. If the question is merely for the purpose of establishing the character of the chutes in Photographs H and I, the question is irrelevant and immaterial because of the late dates of those Photographs H and I, and is also grossly leading.

A. The chute referred to in the photograph is of the same construction as those shown in Photographs H and I.

Q. 53. Did your company always employ this type of chute?

By Mr. Hood: Objected to as incompetent, unless limited to a period subsequent to May 15, 1909, the date of witness' association with the Great Lakes Dredge & Dock Company.

A. Since my employment with this company we have always used this chute or a modification thereof.

Q. 54. Have you ever used closed pipes?

By Mr. Hood: Objected to as irrelevant and immaterial, for the reasons stated in the last objection.

A. Our company has used closed pipes as chutes, particularly in depositing concrete, as in caissons and at elevations directly below the point of discharge from the mixer. An example of these pipes is shown in Photograph J, this pipe being on the end of the discharge chute from the mixer. This and similar pipes were used in discharging concrete from the end of the chute vertically below them into the caissons or the pier.

[fol. 261] Q. 55. When did you visit the job shown in this photograph?

A. At various times during the life of the contract. This particular portion of the work, I visited at or about the time this photograph was taken, which was on April 2nd, 1914.

Q. 56. Did you ever visit the construction work shown in Photographs H and I?

By Mr. Hood: Objected to as irrelevant and immaterial. It is understood that this objection may be considered as entered without repetition to all questions and answers relating to these exhibits or the structures supposed to be illustrated thereby.

A. I visited the C. H. & D. job referred to in Photograph I in the fall of 1910, and I also visited the Hocking Valley Dock job, referred to as Photograph H, in the summer of 1913.

Q. 57. About how many photograph albums are there in your company's files illustrating the work they have done, including the eight albums before you on the table, and for how many years have you had personal knowledge of the albums containing the photographs you have been referring to?

A. Approximately one hundred albums are in our Chicago office, and I have seen the same albums of progress pictures in our Cleveland office as far back as the summer of 1908.

Q. 58. You mean that the albums are duplicates, or are there different pictures in the two cities?

A. These albums are different albums, but they contain many duplicate pictures, it being the practice of our division offices to send in a few of their progress photographs to our Chicago office, and it is also a practice of our Chicago office to send various photographs of equipment and construction work to our different division offices.

Q. 59. What is the apparent extension at the lower end of the chute in Photograph H?

A. This is a short section of chute which is suspended from the main chute supported by the boom, and its purpose is to give a greater range in distributing concrete in various forms. This short section is capable of being lifted by hand and moved in a complete circle about its point of support at the end of the main chute, which gives a distributing radius equal to the length of this chute, the main chute being able to be moved to either side of the center line of the tower by means of the boom, which is pivoted at the foot of the tower.

Q. 60. Referring to the earlier apparatus, about the period of 1908-10, for example, of what material was the apparatus built, and how was it obtained?

By Mr. Hood: Question objected to as immaterial, and, in so far as it relates to structures subsequent to 1909, is also immaterial.

A. The concrete mixers were taken from the stock, such as was on the market at that time, the towers being towers used on other equipment or constructed for some particular job, the chutes being made

up of various thicknesses of plates, usually about 12 gauge, the hoppers being constructed at the time the plant was assembled, and the floating mixers constructed on whatever deck scows were available at the time the plant was assembled.

Q. 61. Where was the lumber obtained for such apparatus?

A. The lumber was obtained from our stock of lumber carried in our yards, or of second-hand lumber which was used on other jobs, or in some cases purchased from the mill for use in some particular pieces of equipment.

[fol. 263] Q. 62. Would your purchase orders of these different parts of the equipment referred to serve to identify the complete apparatus after it was assembled?

A. As a rule they would not, although in some instances an entire plant was built as a permanent piece of equipment, in which case the original purchase order would identify the plant.

Q. 63. About how early was this last practice adopted?

A. To my personal knowledge, the last mentioned practice was adopted in 1910.

Q. 64. Can you produce any records relating to the construction of your early concrete-distributing plants?

A. I have four cards showing description, history and value of the following plants: No. 11 mixer scow, built at South Chicago in 1907; No. 2 tower mixer plant; No. 2 concrete plant; and No. 3 concrete plant, these cards being typical of cards kept in our files on various pieces of equipment carried on our inventory.

By Mr. Hood: The answer is objected to as irrelevant and immaterial, on the ground that the four cards referred to are dated, respectively, Sept. 11, 1913, Jan. 1, 1915, Jan. 1, 1915, and Jan. 1, 1915. Reference by the witness to the date 1907 is quite clearly hearsay, and a mere quotation from one of the cards dated Jan. 1, 1915, and not within the personal knowledge of the witness.

It is stipulated that a photograph of these four cards may be used with the same force and effect as the originals, the latter to be produced at the hearing if requested.

A photograph thereof is marked "Defendants' Exhibit 26, Photograph of History Cards."

By Mr. Hood: Counsel for defendant is asked whether it will be contended that the complete structure or assembly referred to in [fol. 264] one of the cards dated Jan. 1, 1915, as a description, history and value of "No. 11 Mixer Scow" was produced prior to Jan. 21, 1909.

By Mr. Jones: Defendants' counsel is unable to state at the present time whether an earlier date can be established for this particular apparatus, and therefore will draw no conclusions, but will call witnesses to present the facts.

By Mr. Hood: In view of the statement made by counsel for defendants, Exhibit 26 is objected to as not properly identified, no evidence having been produced that this witness is competent to testify regarding the same, or has any personal knowledge of the struc-

tures to which the various portions of the exhibit are supposed to relate.

Q. 65. Explain how these records are kept and what they indicate.

Objected to as incompetent.

A. These records are kept in a plant file in our office, and as additions are made to the plant, or portions of the plant lost or destroyed, the cards are brought down to date and show the status of the plant on the date on the top of the card.

Q. 66. Who is the party in your office most familiar with these cards?

A. Those cards are kept by various clerks, who enter and leave our employ from time to time, and I have myself as general a knowledge of these cards as anyone in our employ.

By Mr. Hood: In view of the last answer the testimony of this witness relative to the cards in question is objected to as incompetent and not the best evidence.

[fol. 265] Q. 67. From your knowledge of your office system, what does the No. 11 mixer scow card indicate to you?

By Mr. Hood: Objected to as incompetent, in so far as it may relate to anything prior to May, 1909, also as irrelevant, immaterial and not the best evidence.

A. This card indicates to me that the scow upon which this mixer was constructed was built at South Chicago in 1907, and that the mixer plant was constructed at a later date and previous to January 1, 1915. It states on the back of this card that this particular piece of plant was wrecked at Rogers City in 1917.

Q. 68. Is the apparatus of any of the exhibits you have been describing identified by any of these cards?

A. No. 3 concrete plant, shown on card dated January 1, 1915, corresponds to Photograph H, Exhibit 17, this plant being constructed at our Whiskey Island yards, Cleveland, Ohio, in June and July, 1913. This indicates that the boom was 90 feet long, the tower of structural steel and 80 feet high, the material hopper connected directly with the tower and made of steel, the mixer a 1½-yard Lakewood, the hoisting engine on the tower being a 7 x 10-inch. The photograph showing this mixer has a sign on same showing it to be Floating Concrete Plant No. 3.

By Mr. Hood: The answer is objected to as irrelevant and immaterial, because relating to a structure produced in June or July, 1913, four and a half years after the filing of the application upon which the patent in suit was issued.

Q. 69. You have described various concrete plants of the Great Lakes Dredge & Dock Company involving chutes suspended from booms; were any of these chutes or booms purchased from William H. Insley, one of the plaintiffs in this suit?

[fol. 266] A. None of the chutes or booms mentioned was purchased of Insley.

By Mr. Hood: The question and answer are objected to as incompetent, the witness not having been qualified.

Q. 70. Did you make any suggestions or assist in any way in the construction of the several outfits you have been testifying to about?

By Mr. Hood: Objected to as irrelevant and immaterial in so far as the question may relate to anything subsequent to January, 1909.

A. On the plant shown in the photograph as Floating Concrete Plant No. 3, I made certain calculations involving the strength of the tower, points of suspension of the chutes, method of pivoting the heel of the boom near the foot of the tower.

By Mr. Hood: The answer is objected to, on the ground that it relates to matters long subsequent to the date of the patent in suit.

Q. 71. Was any of the apparatus you have been testifying about constructed as the result of suggestions obtained from Wm. H. Insley or the Concrete Appliances Company, plaintiffs in this suit?

Objected to as immaterial.

A. No equipment has been constructed from our knowledge of the Insley or other equipment, but has been developed from our own experience. On the other hand, we have been the pioneers in the design of distributing plants for concrete, and I have at various times taken part in conversations of various heads of our company, in which it has been mentioned that Mr. Inlsey had looked over equipment which we had designed and constructed, he afterwards putting on the market equipment of similar design and character.

[fol. 267] By Mr. Hood: The alleged report by this witness as to statements alleged to have been made by unnamed parties is objected to as irrelevant, immaterial, incompetent and hearsay.

Q. 72. What is the location of the Iroquois Plant at South Chicago with reference to the main lines of the several railways connecting Chicago and New York and other Eastern cities?

A. It is approximately north of the east side station of the New York Central and Pennsylvania lines, and visible to trains passing at or about this location. Before South Chicago was so thickly built up, it could be seen from the point where the New York Central crosses the Calumet River. At either of these points a clear enough view could be obtained to distinguish various pieces of plant, such as a concrete tower, etc.

By Mr. Hood: Answer is objected to as irrelevant and immaterial. Nothing which occurred subsequent to January 21, 1909, in the particulars referred to by the witness, can possibly affect any issue in this case.

Q. 73. Have you made any effort to look up your company's records to determine the extent to which you employed labor in what has been said to be the panic year of 1907?

A. I have endeavored to find the pay roll during 1907 and 1908, but have been unable to locate them among our records. Our records at that time—a portion of them—have been destroyed, and others stored at our yards, no record having been kept of their location.

Q. 74. Can you produce any records to show when the Gary intake was built and also the Iroquois Iron Company's plant?

By Mr. Hood: Objected to as incompetent.

[fol. 268] A. I have here record of calculations, costs, etc., kept on the Iroquois job, among which is a blue-print, together with the original tracing, showing No. 1 tower mixing plant, with a notation that it started in on the concrete work on August 25, 1910. This same blue-print shows tower mixer No. 2, and other mixers were started at other dates, a little later in 1910. This file also contains a letter from Julian Kennedy, constructing engineer, representing the Iroquois Company, under date of June 17, 1910, this letter being a proposal by the Great Lakes Dredge & Dock Company, and being accepted over the signature of the president of the Iroquois Iron Company, this proposal being for placing certain fill, which was a part of the contract. In addition we have in this file copy of contract dated the 3rd day of August, 1910, setting forth prices for concrete, steel reinforcement, excavation and piles. This contract was signed on the part of the Iroquois Iron Company by its president, and by Walter Cahill, second vice president of the Great Lakes Dredge & Dock Company.

By Mr. Jones: These files will be further identified later and are offered to Mr. Hood for inspection at this time. A blue-print of the tracing referred to is marked for identification "Defendants' Exhibit 27."

By Mr. Hood: The entire preceding answer of the witness is objected to as irrelevant and immaterial, because relating wholly to occurrences subsequent to January 21, 1909. The offer of inspection of files is declined, if said files are to be further identified in the future. The blue-print is objected to as irrelevant and immaterial, because relating to structures whose dates are subsequent to the date [fol. 269] of application for the patent in suit. No objection is made on the ground that it is a print instead of the original. Plaintiffs again protest against the padding of this record with evidence relating to structures and occurrences long subsequent to the date of filing of the application upon which the patent in suit was issued.

(Answer continued:) I submit also original contract, dated July 1, 1906, entered into with the Indiana Steel Company for the construction of a pump house, concrete foundations, etc., in connection with the intake and waterworks on the Steel Company's property of

Gary, Ind. This contract was signed on the part of the Great Lakes Dredge & Dock Company by T. C. Lutz, first vice president. These various papers offered were taken from our office files at our Chicago office by me.

By Mr. Hood: The testimony of this witness relative to the alleged Indiana Steel Company contract is objected to as incompetent, the witness not having qualified.

Q. 75. Can you identify Defendant's Exhibit 19?

Objected to as irrelevant and immaterial, the exhibit showing on its face that it was published long subsequent to the patent in suit, and no evidence has been introduced to change the prima facie showing.

A. The exhibit referred to is a catalogue gotten out by the Great Lakes Dredge & Dock Company in 1912, and contains pictures taken from photographs of our various construction work carried on previous to this date. A portion of these photographs were gotten together by me, showing construction work in Cleveland, and at other points on Lake Erie.

Q. 76. Explain a little more fully the manner of moving or adjusting the chutes to permit you to vary the point of distribution [fol. 270] of the concrete on the Upson Dock job in 1908.

A. Referring again to Photograph F, the boom shown over the mixer was pivoted on its lower end, made fast with a cable from its upper end, his cable being fastened to an eye in the material hopper, the boom being capable of being moved from side to side. The chute was raised or lowered by means of a block and tackle connected to a sling on the chute, the block and tackle being connected to a winch under the material hopper over the mixer. Additional chutes were placed on the end of the discharge chute shown in the picture, either in a straight line or curved to one side or the other, thereby distributing the concrete directly in front of the mixer, or over an area extending to either side of the mixer.

Q. 77. What was the consistency of the concrete?

A. The concrete was rather wet, or what is known as "sloppy," although at this time, and previous to this time, common practice was to place concrete rather dry.

Q. 78. What consistency did architects favor at this time?

A. Architects at this time favored a drier mixture of concrete, but as a rule the wetness of the mixture was left by the owners to our best judgment.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 79. What education did you have tending to qualify you as a civil engineer?

Objected to as immaterial.

A. High school and technical school education.

X Q. 80. What technical school, and when did you graduate? [fol. 271] A. Throop Polytechnic Institute, Pasadena, California. I did not graduate from this school, but took two years' special work in civil and electrical engineering. This was 1900 and 1901.

X Q. 81. I suppose that since 1901 you have made it a practice to keep yourself reasonably informed of developments in civil engineering and structural matters, have you not?

A. I have.

X Q. 82. And have tried to keep up to date?

A. I have.

X Q. 83. In Defendants' Exhibit 17, Photograph F, the chute section, which is suspended from the boom, is not in position to receive concrete?

A. Not as shown on the photograph.

X Q. 84. In order to place this chute section in position to receive concrete from the mixer, it was lowered by the block and tackle by which it was suspended, and the end nearer the observer (in Photograph F) swung around and allowed to rest in a semi-circular crook formed in the upper edge of a piece of timber extending cross-wise of the framework around the mixer; that is right, isn't it?

A. That is correct.

X Q. 85. The boom, from which the first chute section was suspended, appears in Photograph F to be resting on a cross timber or hand rail: is that right?

A. The photograph shows the boom apparently resting on the hand rail, whereas in reality there was a slight clearance between the hand rail and the boom, this clearance being maintained by the cable from the point of the boom to the material hopper.

X Q. 86. In Defendants' Exhibit 17, Photograph G, it looks very much as if this boom rested on the hand rail, doesn't it?

[fol. 272] A. In this photograph the boom has the appearance of resting on the hand rail. My reason for being positive that it did not was that I have seen this boom moved sideways in order to move the spout to one side or the other, to deposit the concrete in layers, which was common practice at the time the photograph was taken as well as at the present time.

X Q. 87. About how far, that is, through how much of an angle was the first chute section in this apparatus swung from the neutral position in alignment with the axis of the mixer?

A. To an angle of approximately 30°.

X Q. 88. That is the total swing from one extreme to the other you think was as much as 60°?

A. It was.

X Q. 89. What were the cross-sectional dimensions of the heavy timber at the upper front corner of the sand hopper?

A. As I remember this timber, it was approximately 10 x 10 inches.

X Q. 90. And the rear face of this timber was 6 or 8 inches in front of the parallel timber just below it; wasn't it?

A. Apparently so.

X Q. 91. And how was the cable which supported the outer end of the boom attached to this upper cross timber which you say was about 10 x 10 inches?

A. The photograph does not show this plainly, but to the best of my recollection it was attached to an eye-bolt in the timber.

X Q. 92. That is, there was an eye-bolt, the shank of which projected horizontally through the timber; is that right?

A. That is my recollection of it.

X Q. 93. Do you recall the approximate size of the eye, and the [fol. 273] diameter of the material of which it was made?

A. I do not remember this detail.

X Q. 94. As an engineer, what is your judgment of what the probable size would be?

A. It was probably seven-eighths or one inch in diameter.

X Q. 95. That is, the material of which the eye was made was seven-eighths or one inch in diameter; is that right?

A. That is the probable size.

X Q. 96. And the eye itself was probably an inch and a half or two inches in diameter, because it had to be large enough to go through the boom-supporting cable and also the connecting link of the snatch block, through which the cable for supporting the chute is passed. That is probably right, isn't it?

A. It is.

X Q. 97. And the lower end of the boom was stepped against the forward face of the center vertical post, which lies an inch or two back of the forward face of the cross-timber, which is below and back of the cross-timber to which the upper inner end of the boom-supporting cable is attached: is that right?

A. I do not just recollect how the heel of the boom was stepped in as you describe it, but my recollection of it is that it came out beyond the center post, as shown on the drawing, in order to bring it nearer the plane of the eye-bolt above.

Adjourned until Thursday, February 3, 1921, at 10 o'clock.

(Deposition of J. C. Alderman Resumed)

X Q. 98. How often did you shift the scow?

A. The concrete was divided into blocks, as I remember, of approximately 40 feet in length, the bulkhead being in the form at the end of each block. The scow was usually set up in the center of these blocks and the concrete poured in either direction from the mixer, chuting it as far as possible, and pushing it along with hoes or shovels the balance of the way.

X Q. 99. Then you shifted the scow for each block, did you?

A. Yes.

X Q. 100. You did not make these history cards, "Defendants' Exhibit 26," did you?

A. I did not.

X Q. 101. You have no personal knowledge of apparatus of the Great Lakes Dredge & Dock Company prior to the apparatus shown in Photograph F, have you?

A. I have not.

X Q. 102. And whatever knowledge you have of the apparatus shown in Defendants' Exhibit H is subsequent to the time you entered the employment of the Great Lakes Dredge & Dock Company in May, 1909?

A. It is.

X Q. 103. You have no personal knowledge of the Gary contract of 1906 which you have produced, have you?

A. No knowledge, other than that gained from the files.

X Q. 104. And that was subsequent to May, 1909, and in fact was very recent?

A. My knowledge of this has been subsequent to May 15, 1909, but it has been probably of three years' standing.

X Q. 105. In Photograph F there are a large number of inclined braces, such, for instance, as the one upon which the hand of one [fol. 275] of the workmen rests. This photograph is a fair illustration of the arrangement and spacing of these cross braces during the operation of the concreting, is it?

A. It is.

X Q. 106. And in the use of the apparatus the metal chute, which is suspended from a boom, projected between two such braces down into the forms; is that right?

A. It did.

X Q. 107. You have spent a good deal of time searching the records of the Great Lakes Dredge & Dock Company before testifying in this case, have you?

A. I have.

X Q. 108. At whose direction?

A. At the direction of Mr. E. James Fusick, who is assistant general manager.

X Q. 109. Of the Great Lakes Dredge & Dock Company?

A. Yes.

X Q. 110. And you appear as a witness in this case under his direction?

A. Yes.

X Q. 111. Do you know Mr. Insley, about whom you have been asked?

A. I do not know him personally, other than having heard of him often.

X Q. 112. You never have seen Mr. Insley, so far as you know?

A. Not so far as I know.

X Q. 113. Then, you do not know of your own knowledge that Mr. Insley ever saw any of the apparatus of the Great Lakes Dredge & Dock Company?

A. Not of my own knowledge.

X Q. 113a. Why have you been willing to throw mud at Mr. Insley, as you have in your testimony?

[fol. 276] A. My testimony has not been given with a view to throwing mud at Mr. Insley, but, as previously stated, is from conversations I have heard at various times that Mr. Insley has seen our equipment and copied certain features of construction.

X Q. 114. But that was purely gratuitous, so far as your own knowledge is concerned, wasn't it?

A. It was.

Cross-examination closed.

Redirect examination by Mr. Jones:

R. D. Q. 115. Will you refer to Exhibit 26, and explain the structure referred to as "concrete spout 10" open pipe by 36' long?"

By Mr. Hood: Objected to as incompetent, no showing having been made that this witness has any personal knowledge of the particular structure involved.

A. The description as shown would mean a chute 10 inches wide, probably having been made from a sheet iron pipe in which a portion of same was removed, and having a total length of 36 feet.

By Mr. Hood: The answer is objected to as a pure guess.

R. D. Q. 116. Did you see any concrete chutes used in California?

A. I did not.

R. D. Q. 117. Are you familiar with the handwriting of John E. Grady?

A. I am.

R. D. Q. 118. In Great Lakes Dredge & Dock apparatus, of which Photograph H, Exhibit 17, may be assumed to be typical, was the [fol. 277] lower end of the boom always left in the same position, or was it ever moved in any direction other than to swing about a pivot?

By Mr. Hood: Objected to as irrelevant and immaterial, because relating to a structure subsequent to the date of the application upon which the patent in suit was issued, and further, because not proper cross-examination.

A. The heel of the boom was never moved from its original position to my knowledge.

R. D. Q. 119. Do you know who made the cards of Exhibit 26—the long-hand portions?

A. I do not.

Redirect examination closed.

Recross-examination by Mr. Hood:

R. X Q. 120. You have no personal knowledge of the time when the "concrete spout 10" open pipe by 36' long," referred to one of the cards of Defendants' Exhibit 26, was produced or put into use, have you?

A. I have not.

Deposition closed.

Signature waived.

It is stipulated that if A. L. Newman, of Cleveland, Ohio, were called as a witness on behalf of defendants, he would testify that he was a commercial photographer in Cleveland in 1908, and he

was employed by the Great Lakes Dredge & Dock Company to take progress photographs of the building of the dock for the Upson Nut Company of Cleveland; and that he took Photograph "1601, Negative AA," August 7, 1908, identified as Print F of Defendants' Exhibit 17; and that he took Photograph "1601, Negative AAA," August 7, 1908, identified herein as Photograph G, Defendants' Exhibit 17.

[fol. 278] STEPHAN CREUTZ, JR., a witness produced, sworn, and examined on behalf of defendants, deposes and testifies as follows in answer to questions by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Stephan Creutz, Jr.; thirty-five years; 7115 University Avenue, Chicago. I am assistant general foreman of the Universal Portland Cement Company, Buffington Plant.

Q. 2. Were you ever employed in the vicinity of Gary, Ind.?

A. I was. I was employed by the Great Lakes Dredge & Dock Company.

Q. 3. About when did your employment begin?

A. About the day after Labor Day of 1906.

Q. 4. What kind of work were you doing at that time?

A. I was sent out there to be more or less of a straw boss, chasing the gangs of men and speeding up the work.

Q. 5. What sort of work was the Great Lakes Dredge & Dock Company doing?

A. We were excavating the blast furnace pumping station.

Q. 6. Did you see the building of the pumping station?

A. Yes, sir.

Q. 7. Was any concrete work done on it?

A. Yes, sir.

Q. 8. Will you describe the apparatus for distributing the concrete?

A. The first apparatus we used was a concrete mixer set on a flat [fol. 279] car, and the concrete was spouted from the mixer into the bottom of the excavation. We called it chutes then. There was an improvement made on this apparatus to distribute the concrete from one location to another within a radius controlled by a boom holding the chutes or spouts. The ends of the spouts were—the location of the ends of the spouts were placed by swinging the boom that carried the concrete spouts.

Q. 9. On what part of the work was this boom and spout apparatus used?

A. It was used on the intake for the water tunnel of the blast furnace pumping station.

Q. 10. Do you recall who made this improvement you refer to?

A. Mr. Sandy Cameron.

Q. 11. How do you fix the date of Labor Day, 1906, rather than some other year?

A. That being the first time I went out to Gary, Ind.

Q. 12. I mean how do you know it was 1906 and not some other year?

A. I know it was 1906 because the first work was being done on the building of the Gary steel plant.

Q. 13. How do you know that the Gary steel plant was not begun in 1907 or 1908? Have you any way of fixing the year?

A. I know that it was not in 1908, because I became married, and at that time I was employed by the Great Lakes Dredge & Dock Company, and the Gary water tunnel sinking of the first—beginning the sinking of the first shaft for the first water tunnel.

Q. 14. When you were married?

A. February 26, 1908.

Q. 15. I call your attention to Photographs K, L, and M, Exhibit 17, and will ask if you are familiar with anything shown in these pictures?

By Mr. Hood: Objected to as leading.

[fol. 280] A. I am familiar with Exhibit K, concreting the blast furnace pumping station. Photograph L—there was a little doubt right here (Witness has Photograph L in his hands) whether it is the concrete dock or the intake, or the blast furnace pumping station. Photograph M shows the concreting of the blast furnace water tunnel.

Q. 16. Did you ever see the apparatus of Photograph M?

A. I did.

Q. 17. About when?

Objected to as leading, in view of the fact that the witness has the photograph before him.

A. In the latter part of 1906.

Q. 18. If you saw the apparatus of Exhibit K, state about when you saw it.

A. That was about the latter part of November, 1906.

Q. 19. Please describe the operation of Photograph M.

Objected to as leading, in view of the fact that the witness has been handed this photograph.

A. The Photograph M shows the placing of concrete for the blast furnace pumping station water tunnel.

Q. 20. Please trace the movement of the concrete from the time it was mixed until it was finally deposited.

By Mr. Hood: Objection to Q. 19 repeated.

A. From the time the concrete was mixed, it was discharged from the mixer into a charging box or a hopper, and from the bottom of this the concrete ran down the spouts suspended from a boom. This boom was so arranged as to swing at one end in a circle, the object being to reach inside concrete forms.

Q. 21. Are you familiar with the apparatus of any of the Photographs A to J, inclusive, of Defendants' Collective Exhibit 17?

A. I am familiar with Photograph A, showing in the background the steel work of the blast furnace pumping station, and the excavation of the water tunnel for the blast furnace pumping station, being done by locomotive crane standing on a trestle. Between this trestle and the blast furnace pumping station part of the concreting was completed. The photograph shows preparations for supporting the bank and the excavation for the construction of forms for concreting. I am familiar with the apparatus of Photograph B, as it was used during the summer of 1908 to concrete the west dock and turning basin, also the coke oven pumping station. I am not familiar with Photograph C, but have seen the equipment when going down the Calumet River. I am not familiar with D, that is, I am familiar with the concreting apparatus, but not on this particular work. I am not familiar with Photograph E. I am not familiar at all with F; the only thing that is familiar in this photograph is that the spout is like we have used on our work, but with a wider opening at one end, so that it could be swung over a little to one side or the other to allow the concrete to be placed in the forms, and also the short boom. I am not familiar with G. I am not familiar with Photograph H—that is, not familiar at all with the work, but I am familiar with the system of concreting. I am not familiar with I; and not familiar with J.

By Mr. Hood: The answer is objected to as irrelevant and immaterial, and, except as to the apparatus shown in Photographs A, F, and G, as relating to structures, which, according to the evidence heretofore adduced by defendants, were not produced until after the [fol.282] date of filing of the application upon which the patent in suit was issued.

Q. 22. Did you ever know William T. McCann?

A. Yes, sir.

Q. 23. When and where did you know him?

A. I first met Mr. McCann about 1902 on the construction of the Thirty-ninth St. intercepting sewer pumping station, Chicago.

Q. 24. Did he have anything to do with the Gary work?

A. He did; he was the Great Lakes Dredge & Dock Company's carpenter foreman on the construction of the blast furnace pumping station and water tunnel.

Q. 25. Please refer to Exhibit 17, and explain, if you can, the location of the trestles in Photographs A and M.

A. The trestle in Photograph M was constructed to allow the Great Lakes equipment to pass over an excavation, which was made for the blast furnace lorry car and high line foundations. The location of the trestle was in the neighborhood of about two or three hundred feet east of the blast furnace pumping station. In Photograph A, I don't exactly remember how far it is, but I should judge between three and four hundred feet east of the blast furnace pumping station.

Q. 26. Then, as I understand it, these are not the same trestles shown in the two pictures; is that correct?

A. They are not the same trestles.

Q. 27. Where is the trestle of Photograph M in Photograph A?

A. On this side (witness points to the locomotive crane cab); it would be between the trestle the locomotive crane was on and the blast furnace pumping station.

Q. 28. You mean that it appears in the photograph, or that it is [fol. 283] behind the crane cab to which you pointed?

A. Behind the crane cab.

Q. 29. I call your attention to a railway track passing under the trestle of Photograph M, and will ask if this track appears in Photograph A?

A. It does. (Witness indicates track below and beyond the trestle.)

Q. 30. About when did you see the equipment of photograph C from the Calumet River?

A. I don't remember just what year it was.

Q. 31. Have you ever seen apparatus like that shown in photograph E, and if so, when?

A. I have seen similar apparatus at Indiana Harbor. I don't know the date. I was inspector for the Inland Steel Company at the time their concrete dock was being built.

Q. 32. Can you state approximately how many years this would be after the beginning of the Gary work?

A. About four years.

Q. 33. You have referred to several different types of apparatus of this character with which you are familiar. Have you ever seen such apparatus in any city other than near Chicago, that is, the Chicago district, which would include Gary?

A. I saw two floating concrete equipments on the Municipal Pier in Chicago.

Q. 34. Referring to photograph B, Exhibit 17, about how big a job was under construction?

A. That was constructing the coffer dam for the coke oven pumping station, so that forms could be built below the water for making concrete foundations. I have the dimensions of it, but I haven't them with me—it was somewhere around 80 feet long and 35 or 40 feet wide, and 28 feet deep.

[fol. 284] Q. 35. On what is the apparatus mounted in this photograph?

A. It is mounted on a scow.

Q. 36. What is the body of water on which the scow is floating?

A. The Gary turning basin.

Q. 37. Was any concrete work done in connection with this turning basin, other than the concrete foundations you have just referred to, for the pumping station?

A. Nearly all the concrete dock for the Gary harbor, including the turning basin.

Q. 38. How extensive a job was this dock?

A. It was several thousand feet long—around 5,000 feet.

Q. 39. Please describe the apparatus in this photograph B.

Objected to as leading, as the witness has the photograph before him.

A. This apparatus is a concrete equipment built on a scow, consisting of a concrete mixer at the proper elevation, so that concrete could be spouted into the concrete dock; and above the mixer was constructed two hoppers, one for stone and one for sand, this being at one end and the other end of the scow being the cement shed. A boom was placed to support the chute, for the purpose of raising the spout so that the concrete equipment could be moved—I meant to state for the purpose of spouting the concrete in the forms for the dock, and also to raise the spout when moving the equipment ahead.

Q. 40. You state that the boom was for the purpose of spouting the concrete in the forms. Please explain more fully what you mean.

A. The purpose of the boom was to control the position of the end of the spout.

Q. 41. How did it do this?

[fol. 285] A. By booming up the boom and swinging it from side to side.

Q. 42. In the spouting apparatus on the intake job, which you say is shown in photograph M, about how many lengths of chute were employed at various times in the work?

A. Well, one, two or three.

Q. 43. Referring to this photograph, what do you consider one length of chute?

A. I consider one length of chute being the number of sections of chute used.

Q. 44. I mean the photograph M; do you consider the chute extending from the hopper to the vertical suspending rope to be one section or two sections in your previous answer?

By Mr. Hood: Objected to as grossly leading.

A. To be two lengths of spout or two sections.

Q. 45. Then, if you refer to those two sections individually, what was the arrangement when you had only one length of chute, as in your answer to Q. 42?

A. The number of sections used would be decided by the distance the concrete form was from the mixer.

Q. 46. What is the greatest number of sections that you recall having seen used at any one time?

A. Why, five or six sections. What I had in mind was how many sections I had seen used. On this particular work about three sections is the most I have seen used.

Q. 47. Do you recall any photographs being taken of the Gary work?

A. I do. Photographs were taken of the progress of the buildings of the Gary steel plant, including building foundations, harbor and docks, at numerous times, beginning in 1906, after I went to work there.

Q. 48. Do you recall how long it took to build the Gary plant sufficiently to enable the blast furnaces to begin operation?

Objected to as not the best evidence.

A. About—a little over two years.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 49. When did they begin pouring concrete at Gary?

A. In the fall of 1906.

X Q. 50. In what month?

A. In the latter part of November or December.

X Q. 51. And that apparatus for pouring the concrete consisted in part of a car on which the mixer was placed; is that right?

A. Yes, sir.

X Q. 52. Then there was an open top wooden spout, wider at one end than the other, that was placed so as to receive the concrete from the mixer; is that right?

A. Yes, sir.

X Q. 53. Did you do any work on the concrete mixer or spouting apparatus?

A. I did no work in the construction of it.

X Q. 54. Did you work in handling it?

A. Yes, sir.

X Q. 55. What were your duties in handling this apparatus?

A. My duty was to watch the spout and see that the men kept it from blocking up.

X Q. 56. Did that first apparatus have a spout or chute that was suspended from a boom, so as to receive the concrete as it flowed from this open topped wooden spout or chute?

A. No, sir.

[fol. 287] X Q. 57. At first you had some sheet metal chutes or troughs which were placed so as to receive the concrete from the wooden trough; is that right?

A. No, sir, we had a steel spout. The first concrete mixer was just a steel spout that went up to the mixer, and then we improved that idea with the boom that the spout be suspended from.

X Q. 58. Then at first, in the latter part of November, 1906, you had a steel trough that was arranged in position to receive the discharge from the mixer, about as shown in photograph L of Exhibit 17; is that right?

A. I don't recollect this photograph.

X Q. 59. What was the very first concrete work in connection with which this mixer car was used at Gary?

A. In concreting the blast furnace pumping foundation.

X Q. 60. That included a wall close to the lake and at right angles to the water tunnel or intake; is that right?

A. Well, I would not call it close to the lake; it was quite a way from the lake.

X Q. 61. Then they built this pumping station foundation first,

and then extended the water tunnel structure from the pumping station foundation toward the lake; is that right?

A. No, sir.

X Q. 62. Suppose you try if you can straighten out as to just what this arrangement was.

A. You mean the arrangement of the position of the pumping station with reference to the intake?

X Q. 63. Yes, and what you call the water tunnel.

A. The Gary harbor was excavated from the shore line due north and due south several thousand feet south of the shore line, and the concrete dock was constructed on the west side of this harbor, and in this dock the intake was constructed for the water tunnel that sup-[fol. 288] plied the water for the blast furnace pumping station, the pumping station being due west of this intake along the line of the blast furnaces.

X Q. 64. Is what you have called the "Gary Harbor," which you say was excavated due south from the lake shore line, the same thing as the turning basin that you have referred to?

A. The turning basin took place at the south end of the harbor.

X Q. 65. Which was built the first, the dock, the intake, the water tunnel, or the blast furnace pumping station foundation?

A. The blast furnace pumping station.

X Q. 66. And they began to pour concrete into this foundation the latter part of November or sometime in December, you think?

A. I do.

X Q. 67. And the apparatus they used was a flat car or platform on wheels of a gauge to run on a standard railroad track with the mixer mounted on the car, and some sand and gravel hoppers, or charging platform rather, above the mixer; is that right?

A. No, sir, if you have reference to the first equipment.

X Q. 68. What was the first equipment which you started to use on this pumping station foundation?

A. A flat car with a concrete mixer on it, and a platform built over the top of the mixer, so that men could push wheelbarrows over the top of the mixer, and dump them in proportionate amounts of loads into the mixer.

X Q. 69. That is the apparatus on which three men are standing in photograph F of Exhibit 17.

A. No, sir, I don't think it is. I didn't know about this photo-[fol. 289] graph being taken, but it looks familiar. It looks exactly like the concrete mixer used on the blast furnace pumping station foundation.

X Q. 70. At first, how did you get the concrete from the mixer to the chutes?

A. The first time the chute was put right at the end of the mixer, and it didn't work out very good.

X Q. 71. You mean that first one section of the sheet metal chute was put up to feed the concrete from the mixer?

A. Yes, sir.

X Q. 72. And that sheet metal chute which projected down into the excavation which had been provided for the pumping station foundation?

A. Yes, sir.

X Q. 73. Well, that arrangement was a good deal like the arrangement of chute and mixer which you find illustrated in photograph L, wasn't it?

A. Yes.

X Q. 73. When was the open-topped wooden chute, shown in photograph K made? I mean the wooden spout between the two men in the upper left-hand corner of the photograph.

A. That was made shortly after the first try-out.

X Q. 74. And before any boom of any kind was put on the mixer car?

A. I don't understand that.

X Q. 75. This wooden chute, which is illustrated in the upper left-hand corner of photograph K and extends between the two men was made and put into use for some time before they built any boom on the mixer car; that is right, isn't it?

A. No, it was just a very short time.

X Q. 76. How far had the foundation work progressed on the pumping station when this wooden chute was made?

[fol. 290] A. Some of the bottom was put in.

X Q. 77. This photograph K shows the excavation, the bracing and some of the forms for the pumping station foundation, doesn't it?

A. It does.

X Q. 78. Can you tell from this photograph K how far along the pumping station foundation had progressed at the time of the photograph?

A. At the time this photograph was taken the foundation for the pumps and the walls was being concreted.

X Q. 79. About how long after this photograph K was it before the pumping station foundation was done and they shifted the mixer car ready to begin work on the intake or water tunnel?

A. They began excavating for the intake for the water tunnel while the concreting was being done at the blast furnace pumping station.

X Q. 80. About how long did it take to complete the pouring of concrete in the pumping station foundation after the work had reached the condition shown in photograph K?

A. It was the completion of the blast furnace pumping station foundation, which was completed in the early part of the summer 1907.

X Q. 81. You don't find any part of any boom construction for supporting the metal chutes in photograph K, do you?

A. From the appearance of the photograph the boom is broke. The boom broke down.

X Q. 82. What is there on the photograph that indicates to you that the boom broke down?

A. From the fastenings on the end of the timber that leads into the concrete chute.

Witness states that he has been working on night shift and has [fol. 291] had no sleep for nearly twenty-four hours. An adjourn-

ment is therefore taken until Friday morning, February 4th at 9 a. m.

Chicago, February 4, 1921.

Parties met pursuant to adjournment. Present as before.

Cross-examination of Mr. Creutz continued:

X Q. 83. You do not find anything in photograph K which would indicate parts of a broken boom, do you?

A. I see by photograph K that the boom is broken—it fell down into the chute.

X Q. 84. That piece of board that looks nearly white, and has its lower end lying in the metal chute and its upper end laid over the open end of the wooden spout, was put in there to prevent the concrete from splashing over the side of the metal chute, because the metal chute was placed at an angle to the wooden chute; isn't that right?

A. I cannot see whether—with the magnifying glass, it appears that there is about a 2-inch plank put into the chute and a chain and hook fastened to a metal eye on the chute and supported by a block and tackle which holds up the chute.

X Q. 85. And that 2-inch plank is tied in place by having its lower end projected beneath a piece of cable which is wrapped around the metal chute just below the eyes into which the chain hooks are hooked, and at the upper end there is cable passed around the plank and apparently tied back to the mouth of the wooden chute?

A. That is right.

X Q. 86. If that piece of plank was simply part of a broken boom, it would hardly have been intentionally tied into place in the manner shown in the photograph, would it?

A. I do not know.

[fol. 292] X Q. 87. You have not any independent recollection of having seen the boom break?

A. No, I haven't. I was not there; I was on this and on various other jobs every day.

X Q. 88. Now, as a matter of fact, you are not sure just how long the mixer car was used before they put the boom on it, are you?

A. I don't know the number of days, but it was a very short time after the first mixer was used.

X Q. 89. Are you very sure that the boom was put on the mixer car within thirty days from the time the mixer car was first used on the blast furnace pumping station foundation?

A. I don't know whether it took within thirty days after the first mixture was used, but about five weeks I should judge, on account of the delays we had on the job.

X Q. 90. Are you sure that the booms were put on the mixer car before the pumping station foundation was finished?

A. Yes, sir.

X Q. 91. You are just as sure of that as you are about any other fact that you have testified about, aren't you?

A. Yes, sir.

X Q. 92. Now, when they put the booms on the mixer car, both booms were put on at the same time, were they not?

A. I could not say whether they were put on at the same time or not. The first boom was put on to help support the hopper; that was when we were close to the foundation, and the longer boom was put on when we extended the chutes—I believe at the time that the carpenters were building both booms, because Mr. Cameron and myself had been talking about spouting the concrete and doing away [fol. 293] with the wheelbarrow work, and at this time we were also concreting the first dock work with another concrete mixer.

X Q. 93. You mean that work on concreting the dock along the west side of the harbor was under way while you were concreting the pumping station foundation?

A. Yes, sir.

X Q. 94. The "first boom" which you have mentioned was the short V-shaped boom which was fastened to the two uprights forming part of the frame around the mixer, was it?

A. It was two chambers placed in V-shape.

X Q. 95. That boom could not be swung from side to side, could it?

A. No, not the short one.

X Q. 96. When they put the long boom on the mixer car, they at the same time erected the mats which is shown in photograph A projecting above the loading platform of the mixer car and braced sidewise by two diagonal bracings; is that right?

A. They must have.

X Q. 97. You have not any independent recollection of that fact, have you?

A. Not being there at the time some of this construction was going on, owing to conditions of handling our equipment, a good many different guy lines were used to hold up the boom on the concrete mixer after breakdowns, due to the boom. I could not say that the perpendicular mast braced from two sides was built at the same time that the boom was built?

X Q. 98. Well, Mr. Creutz, you know that that long boom could not be raised and lowered without the provision of a mast of some such kind as shown in photograph A, could it?

A. It could be raised and lowered by block and tackle pulled by hand.

[fol. 294] X Q. 99. Was it so raised and lowered?

A. The first one we raised and lowered by a block and tackle pulled by hand.

X Q. 100. What was that hand-operated block and tackle fastened to?

A. It was fastened to a cleat, just a temporary cleat.

X Q. 101. What was the temporary cleat fastened to?

A. To a timber on one side of the mixer.

X Q. 102. Suppose you point out on Photograph A the spot where you think this hand-operated block and tackle was fastened.

A. This apparatus is the complete improvement after we began with the second concrete mixer, then using a boom and spouting the concrete. This Photograph A show the work being done some time later than the concreting of the foundation of the blast furnace pumping station foundation.

X Q. 103. Is not the mixer car shown in Photograph A the same mixer car that you used at the beginning on the pumping station foundation?

A. It appears to look a good deal the same.

X Q. 104. And has the same framework and the same loading platform over the mixer, hasn't it?

A. It looks about the same.

X Q. 105. Can't you point out on this photograph the point on the framework where you say this hand-operated block and tackle was connected for operating the boom?

A. We had a stand on one side of the mixer when we pulled on the block and tackle to raise the boom.

X Q. 106. Where was this block and tackle fastened on the framework?

A. I think it was fastened to one side.

X Q. 107. Can you not point out the approximate place on Photograph A?

[fol. 295] A. This boom appears to be longer, but in using our second equipment the block and tackle was fastened to one side of the framework, one block was fastened at the end of the boom and the other block was fastened to one side of the framework on one of the timbers.

X Q. 108. You mean over to one corner?

A. Yes.

X Q. 109. What kept the boom from swinging sidewise under the pull of the block and tackle?

A. We had guy lines.

X Q. 110. After they put the booms on the car, that is, the boom which you say was provided for supporting one of the chute sections, did they afterwards discard that boom, or an equivalent boom, and operate the apparatus to pour concrete without supporting these sections on a boom?

A. I don't recollect removing the boom, but I do recollect that at times it was not necessary to use the boom.

X Q. 111. Well, it is your recollection that after the first V-shaped boom was put on the car the apparatus was not used after that without that V-shaped boom being on the car; that is right, isn't it?

A. The apparatus was used after that with both booms on it.

X Q. 112. But after they had once installed that little V-shaped boom, they did not take that boom off and use the apparatus without the little boom, did they?

A. They may have and they may not have, as far as I know. There were times when I was on other work in that vicinity.

X Q. 113. But, so far you know, after that little boom was put on the car it was not taken off until the job was finished; that is right, isn't it?

A. It may have been removed to transport the mixer.

[fol. 296] X Q. 114. I am not asking you what might have been done; I am asking you what you remember yourself.

A. I remember that this mixer was moved from the intake for concreting the tunnel that the boom was on. The boom was in position.

X Q. 115. Both booms?

A. The long boom—I do not recollect the shorter boom.

X Q. 116. That is, they left the long boom, which is illustrated in Photograph A, on the car when they shifted it from the foundation side to the intake spout; is that right?

A. Yes, sir.

X Q. 117. And you are as sure of that as you are of any other fact that you have stated?

A. Yes, sir.

X Q. 118. Well, at that time the car had on it the side-braced mast which is illustrated in Photograph A?

A. I would not state that it was at that time according to Photograph A—it was before, I believe, the time Photograph A was taken.

X Q. 119. I am not asking you about the time when the shift was made, but about the condition of the apparatus at the time the shift was made.

A. Yes, this mast was on the concrete mixer. (Witness points to the mast on the mixer car frame to which the boom block and tackle was attached in Photograph A.) At that time that mast was not there—what I should have had in there was—at the time of concreting the intake.

X Q. 120. About how much length of the pumping station foundation was concreted at one setting of the mixer car?

A. The width of about 40 feet in a radius of a circle of about 40 [fol. 297] or 50 feet; that is, in the newer part of the work where the proper slope of the chute could be maintained, and the chute was shortened by coming to the top of the work so that we could lower the end to increase the slope of the chute.

X Q. 121. While they were concreting the foundation, how was the upper end of the first metal chute held in place to receive the discharge from the wooden trough?

A. You refer to the first operation?

X Q. 122. Yes, I mean the first operation with the wooden chute.

A. The end of the chute was supported by lines fastened to it. On different occasions we had timber support at the bottom of the chute to hold it up against the bottom of the hopper.

X Q. 123. When they were concreting the intake they used two 16 feet lengths of metal chute, lapped at their ends and tied together so as to make a single chute about 29 or 30 feet long, and at times they used a third 16-foot metal chute extended substantially parallel with the line of the intake tunnel, with its upper end in place

to receive the discharge from the lower end of the double section chute that was suspended from the boom; is that right?

A. Yes, sir, that is correct.

X Q. 124. And when the boom was swung somewhat to one side, the lower end of this double section metal chute was tied to the upper end of the third chute, so as to hold it in place sidewise, wasn't it?

A. Yes.

X Q. 125. And in order to get the boom-supported metal chute as far as possible to one side, that boom-supported metal chute was drawn to one side of the position which it would occupy if it swung normally from the boom?

A. No, the boom was held also.

[fol. 298] X Q. 126. And held in place by guy wires?

A. No, by guy ropes or wires. In my previous answer I should have said that the boom was swung over the chute, as it was necessary in this way to hold the chute in position.

X Q. 127. About how much length of the intake tunnel was concreted at one setting of the mixer car?

A. About 50 feet or more.

X Q. 128. About how much more?

A. Either way—it depended on how much of the concrete forms were built.

X Q. 129. You mean by that about 100 feet of concreting was done at one setting of the mixer car, and the car then moved along to another position?

A. I would not say that it would be about 100 feet.

X Q. 130. How much would you say?

A. I have never measured the distance, but from my observation, passing about this work on my regular duties, it would be in the neighborhood of 60 feet.

X Q. 131. I understood you to say that you saw the apparatus shown in Photograph M the latter part of 1906; where was that?

A. In concreting the blast furnace pumping station.

X Q. 132. You mean that very apparatus there, do you?

A. It looks about the same.

X Q. 133. And you are as sure of that as you are about the other facts of which you have testified?

A. Yes, sir.

X Q. 134. In describing the construction which you say is illustrated in Photograph M, you refer to a "charging box or hopper," and I understood you to say that there was a discharge opening in the bottom of this structure; by that term "charging box or hopper," do you mean to refer to the wooden trough or chute which is between the two men at the upper left-hand corner of Photograph K?

A. Yes, sir.

X Q. 135. Well, that structure, instead of having a discharge opening in its bottom, is simply a trough-shaped structure with an open discharge end?

A. That charging hopper had been rebuilt while on the concreting of the water tunnel.

X Q. 136. Which came first, the wooden trough-like structure shown in Photograph K?

A. The wooden trough came first.

X Q. 137. Well, does not Photograph M show the same sort of a wooden trough which is also shown in non-operative position in Photograph A?

A. It shows about the same kind of a trough.

X Q. 138. The rebuilt structure, to which you have referred, was merely a heavier and somewhat longer trough-shaped structure of the same general character, and is the one which is projecting from the inner side of the mixer car in Photograph A; isn't that right?

A. That appears like it.

X Q. 139. After they installed the long boom, which was provided to partially support the metal chute section, how did they hold the upper end of the boom-supported metal chute section in position to receive concrete from the wooden spout or trough?

A. They built a short boom. We had various ways of holding this hopper, and it was hung on part of the frame and also on cables fastened to the outer corners.

X Q. 140. When you say "hoppers," you mean the wooden trough-like construction?

A. Yes, sir.

X Q. 141. My previous question did not refer to this wooden construction, but to the metal section which was suspended from the long boom. How was the upper end of this metal chute section supported [fol. 300] in place with relation to the discharge end of the wooden trough in order to receive the concrete, that is, when the metal section was supported in part by the long boom?

A. At one time the long chute was supported by a line from the end of the boom down to the end of the chute, and the third chute rested on the end of the long chute and was also supported there by a brace from the work, and the upper end of the long chute was supported by fastenings to the chute from the framework of the mixer, and at times it would rest on a timber that could be laid on the work, and block and tackles supported this chute from the end of the boom about half way down the chute.

X Q. 142. You have referred to a third chute in your last answer; was this the chute section which was extended substantially parallel with the forms?

A. Not necessarily. It just happened that they had to swing a third chute to get the concrete into the work.

X Q. 143. By the "third chute" you mean a final section which rested upon stationary supports and arranged at the lower end of the boom-supported chutes?

A. Yes, sir.

X Q. 144. Now, you state that at times this third chute was rested upon the lower end of the boom-supported chute?

A. Yes, sir.

X Q. 145. And could it rest on this boom-supported chute and still permit concrete to flow from the boom-supported chute into it?

A. It was fastened to it by lugs for that purpose.

X Q. 146. You do not find any such lugs in the apparatus shown in Photograph M, do you?

A. With reference to the third chute, the lugs seem to be hidden by shadows or the man standing there.

[fol. 301] X Q. 147. Now, isn't it a fact that no such construction by which the chutes could be connected together was provided in any of the Great Lakes Dredge & Dock apparatus until long after this Gary job was completed, and you just have become somewhat confused in your recollection?

A. No, sir, I am not confused as to the use of the boom; it could be boomed up or down, or swung from side to side, from which spouts could be hung for the purpose of placing concrete on the Gary work.

By Mr. Hood: The answer is objected to as not responsive and volunteered.

X Q. 148. You have stated that you saw the apparatus illustrated in Photograph B, Exhibit 17, in the summer of 1908.

A. Yes, sir.

X Q. 149. Are you as sure of that fact as you are of any other fact about which you have testified?

A. I am.

X Q. 150. Just what was the construction of that apparatus which you say you saw in the summer of 1908, as to the manner of supporting the inner end of the chute section, which was supported in part by the boom?

A. You refer to the inner end of the chute?

X Q. 151. Yes.

A. The inner end of the chute was fastened to the charging hopper.

X Q. 152. What was the construction of the charging hopper?

A. The charging hopper was constructed of wood. There was an improvement made there of a steel hopper—more or less of a chute—to allow the concrete to be held back from overlapping.

X Q. 153. You mean that there was a hopper or chute construction [fol. 302] arranged between the mixer and the boom-supported chute?

A. Yes, sir.

X Q. 154. You are right sure about that, are you?

A. Yes, sir.

X Q. 155. What type of mixer was used?

A. We were using a batch mixer.

X Q. 156. What type of batch mixer?

A. Similar to the Smith mixer.

X Q. 157. Was that a tilting mixer or a fixed body mixer?

A. I don't remember whether this mixer tilted, or whether we had a little spout that went into the spout of the discharge end of the mixer that was tilted down to run the concrete out of the mixer.

X Q. 158. You are fixing this date of the summer of 1908 from memory, are you not?

A. No, sir.

X Q. 159. How do you fix it?

A. I fix it by two incidents that happened in the year 1908, the first being that I was married on February 26, 1908, and the next that I left the employment of the Great Lakes Dredge & Dock Company about the 28th of March, 1908.

X Q. 160. And you think you saw that apparatus after you left the employ of the Great Lakes Dredge & Dock Company?

A. The floating concrete mixer, yes.

X Q. 161. And how many times did you see it?

A. I saw it practically every day that I was employed as inspector for the Illinois Steel Company during the summer of 1908.

X Q. 162. What is your recollection of the earliest date on which you saw that apparatus in 1908?

A. About the middle of the summer.

[fol. 303] X Q. 163. In what condition was it when you first saw it; was it partly completed or entirely completed?

A. It was entirely completed, ready for use.

X Q. 164. Was it changed at all in the construction of the mixer and boom-supported chutes from the time it was started in operation until the work on the turning basin was completed?

A. No, in general it was not changed.

X Q. 165. The mixer was always the same, was it?

A. Yes, sir.

X Q. 166. And the hanger supporting the boom-supported chute with relation to the mixer was always the same?

A. Yes, it was about the same.

X Q. 167. You never saw the precise apparatus shown in Photograph F. did you?

A. I do not remember that it was the same in reference to equipment.

X Q. 168. What part of the work at Gary is shown in Photograph B?

A. The background shows the blast furnaces themselves and the stacks and ore bridges, and the blast furnace high line to the dock, turning basin, the coke oven pumping station, the floating concrete mixer, and part of the concrete dock on one side of the coke oven pumping station.

X Q. 169. Photograph B appears to have been taken in the winter time when the snow was on the ground; is that right?

A. Yes, sir.

X Q. 170. Work was apparently in progress, however, in view of the steam arising from various points in the photograph; is that right?

A. Yes, sir, they were working on the job at the time.

X Q. 171. Now, this shows part of the work in the winter following [fol. 304] the time when you first saw this apparatus, doesn't it?

A. Not of the same year.

X Q. 172. Of what year?

A. That pumping station was put in in 1909, and the year before the concrete work was being done on the west side of the harbor, and that would be a few thousand feet from where this mixer started in work.

X Q. 173. The structure that is illustrated in Photograph B, in so far as the mixer and boom-supported chute are concerned, is the same as it was when you first saw this apparatus, isn't it?

A. Yes, just about—no, not when I first saw it.

X Q. 174. What is different?

A. When I first saw the mixer, the first time we used it, we had a hopper at the discharge end of the mixer.

X Q. 175. And that hopper was discarded?

A. That hopper was discarded; it did not work successfully.

X Q. 176. About how much length of concreting was done with this apparatus of Photograph B at each setting of the scow?

A. Probably 25 feet.

X Q. 177. And then they would shift the moorings of the scow to a new position?

A. Yes, sir.

X Q. 178. You have stated that it was common practice for photographs to be taken at the Gary work during its progress; about how often were these photographs taken?

A. Quite frequently.

X Q. 179. Every week?

A. No, I think sometimes there would be a couple of photographers down there from the Steel Company, and photographers from the [fol. 305] Great Lakes Dredge & Dock Company.

X Q. 180. It was the practice to keep very close track of the progress of the work by making sufficient photographs of it, wasn't it?

A. I think it was.

X Q. 181. At the time the work on the blast furnace pumping station was going on, what other concreting work was being carried on?

A. The concrete dock was being done at the same time.

X Q. 182. But your work kept you at the pumping station and intake most of the time, didn't it?

A. At first.

X Q. 183. That is, until after the intake or water tunnel had been started?

A. No, sir, I was on the concrete dock.

X Q. 184. That is, you were at work on the concrete dock before you began work on the water tunnel?

A. Yes, sir.

X Q. 185. You were around the work at the blast furnace pumping station quite frequently, however, were you not?

A. Yes, sir.

X Q. 186. And it is your recollection that photographs were taken quite often during that period of work on the pumping station?

A. I would say that there were several photographs taken.

X Q. 187. At several different times?

A. Yes.

X Q. 188. Of the apparatus that was used for chuting the concrete?

A. Yes, sir.

X Q. 189. About how often?

[fol. 306] A. I don't remember about how often, but I have seen the photographers down there taking pictures of the various parts of construction work going on.

Cross-examination closed.

Redirect examination by Mr. Jones:

R. D. Q. 190. In answering these questions as to the details of the apparatus used in 1906 and 1907, you did not have the photographs before you, did you, except in a few specific cases, before the end of the examination?

A. Only for references of details of construction and equipment.

R. D. Q. 191. What I mean is, when Mr. Hood asked you regarding these various details, he put the photographs aside so that you would not be influenced by them, didn't he?

A. My testimony was not influenced by the photographs when they were not before me during my testimony.

R. D. Q. 192. You have stated that you saw the apparatus of Photograph M in the latter part of 1906, this photograph bearing date of June 5, 1907; you have also stated, I believe, that the mixer of Photograph L, bearing date of March 2, 1907, is probably the same mixer as that shown in Photograph M. I ask you to refer to these photographs and see if Photograph L refreshes your recollection as to the earliest date when you may have seen the boom and chute apparatus of Photograph M in use?

By Mr. Hood: Objected to as incompetent, in view of the fact that the witness has testified that he does not recall Photograph L.

A. The latter part of November, or during December, 1906. Photograph [fol. 307] L shows a mixer that we had in use in concreting the blast furnace pumping station, that is, I refer to the equipment as being similar.

R. D. Q. 193. Do you mean that the mixers in these photographs are different mixers, but of similar construction, or do you mean that it is the same mixer and car with additional parts added?

A. I believe it is the first car mixer, improved to spout the concrete with boom chutes.

R. D. Q. 194. What I am trying to find out is, whether there were two car mixers or one at this time.

A. I don't remember two, on account of being over on the dock work.

R. D. Q. 195. Will you try and explain, then, how the mixer shown, apparently, in a photograph taken in March, 1907, with no boom and chute on it, could have been seen by you equipped with a boom and chute in November, 1906, as I think you have just testified?

A. The intake for the pumping station was put in with a mixer with a boom and chute before the tunnel was concreted.

R. D. Q. 196. Then, what became of the boom and chute in the picture of March 2, 1907?

A. I don't know. I don't see it. The mixer is turned around in this picture.

R. D. Q. 197. But you have previously testified, I think, that there is no mast on the mixer in this picture; do you mean that there might be a boom on the mixer at this time?

Objected to as leading.

A. At the time this picture was taken, I was not on this work, and I do not know what they did then.

R. D. Q. 198. I understand you to testify that you saw the apparatus of Photograph M in November, 1906; this apparatus includes a mast, a boom, and a chute. How could you have seen this [fol. 308] apparatus at that time if the same mixer car in March, 1907, has no mast on it? My original question was: Does this Photograph L refresh your recollection in any way as to the date when you first saw the apparatus of Photograph M?

A. It does not seem to refresh my memory.

R. D. Q. 199. Can you account for the fact that the mast seems to have disappeared in the March picture, and there is also no boom visible?

A. They may have had two mixers at that time. The Great Lakes Dredge & Dock Company had several mixers on the Gary work.

R. D. Q. 200. In Photograph K, what do you call the excavation with its wooden bracing?

A. The coffer dam.

R. D. Q. 201. What are these objects to which I point in Photographs K and M?

A. Lugs (witness points to eyelets near the end of the chutes).

R. D. Q. 202. Then, when you referred to lugs on the chute section you were talking about these curved eyelets?

Objected to as leading.

A. Yes, sir.

R. D. Q. 203. And the chute sections were sometimes fastened together by ropes passing through the eyelets, as in Photograph K?

Objected to as leading.

A. Yes, sir.

R. D. Q. 204. In Photograph B you note what is apparently a short chute projected from the mixer opening?

A. Yes, sir.

R. D. Q. 205. When you swing the boom to move the chute to one side or the other at an angle to its normal position, what is there [fol. 309] to prevent the concrete flowing from the short chute in the mixer from spilling out of the swinging chute?

A. The short chute was operated by one man, who tilted it more or less to increase or decrease the amount of concrete in discharging the concrete mixer, to keep the concrete from running over the sides of the chute.

R. D. Q. 206. What I mean is, if the chute is swung to one side, why does not the concrete over-chute it entirely?

A. Because there was enough leeway in the end of the chute to swing that.

R. D. Q. 207. Explain a little more fully what you mean by lee-way.

A. That there was enough room at the end of the spout to shift it over so that the concrete could be poured from the short spout.

Recross-examination by Mr. Hood:

R. X Q. 208. As far as you know, during the work on the blast furnace pumping station foundation and the adjacent water tunnel and intake, the same mixer car was used throughout?

A. With its improvements.

Signature waived.

ALEXANDER C. PATTERSON, a witness produced, sworn, and examined on behalf of defendants, deposes and testifies as follows in answer to questions by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Alex. C. Patterson; fifty-two years of age; 223 N. Fairfield Avenue, Chicago, Illinois. I am a photographer.

[fol. 310] Q. 2. Where were you employed in 1906 and 1907?

A. I was official photographer for the Indiana Steel Company at Gary, Ind. I believe subsequently they called it the Illinois Steel Company of Gary, Ind.

Q. 3. I call your attention to photographs K, L and M, Defendant's Exhibit 17, and will ask if you can identify them?

A. I can. K is numbered 85 and shows the excavation for the pumping station in its early stages; L is numbered 125 and shows the bulkhead end of the two intakes at the channel end; and M, numbered 178, shows the progress in the section of two 10" intakes between the power house and bulkhead or channel end of the intake.

Q. 4. Who took these pictures?

A. I photographed them myself.

Q. 5. When were they taken?

A. No. 85, or Exhibit K, was taken December 31, 1906; L was made March 2, 1907; and M was made June 5, 1907.

Q. 6. You are basing these statements on the dates appearing on the photographs; is that right?

A. Yes, sir.

Q. 7. What was your practice with reference to dating photographs?

A. After making the exposure of the negative I made a note in the field book showing what the photograph would be, and in each of these trips for making photographs the date was always written in the field book with the numbers of the negatives and description following.

Q. 8. When did you put the dates on the plates?

A. The day following making the exposure the negatives were developed, and as soon as they were dried the numbers and dates were put on the negatives.

Q. 9. How recently have you seen these three negatives?
 [fol. 311] A. Within fifteen minutes, at the office of the vice-president of the Illinois Steel Company, Continental & Commercial National Bank Building, Chicago.

Q. 10. And are these prints accurate reproductions of the negatives?

A. They are.

Q. 11. Did you examine any other prints in that office?

A. While I was there I looked through a part of the files showing other work of the pumping station coke ovens, which were located on the turning basin.

Q. 12. Did you see any prints of the three negatives referred to, aside from these?

A. I saw duplicates of these same photographs in the files of the Illinois Steel Company—the office photograph file, showing progress work on the pumping station and intakes of the Illinois Steel Company's Gary plant.

Q. 13. Do you recall the apparatus shown in photograph M?

A. I do.

Q. 14. Do you recall the details of it?

A. No, it was there, but I do not know anything about the details.

Q. 15. Who took photograph 967, December 18, 1909, in album 37 of Great Lakes Dredge & Dock Company?

A. I did.

Q. 16. Whose name appears on the back of this print?

A. My name.

Q. 17. Did your name also appear on the three prints, duplicates of K, L and M, in the file of the Illinois Steel Company?

A. It did.

Q. 18. When did you take this picture 967, which is reproduced as photograph B, Defendants' Exhibit 17?

A. December 18, 1909.

Q. 19. For whom did you take this photograph B?

[fol. 312] A. For the Illinois Steel Company.

Q. 20. Do you know whether the Great Lakes Dredge & Dock Company had a photographer?

A. Well, they had a whole lot of photographic work done by a man whose name was Christie. I understand he was their official photographer.

Q. 21. Is he living now?

A. I believe he is dead.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 22. You do not know of your own knowledge that Mr. Christie made photographs for the Great Lakes Dredge & Dock Company?

A. No.

Deposition closed.

Signature waived.

Chicago, February 5, 1921.

Parties met pursuant to adjournment. Present as before.

By Mr. Jones: The book of the George M. Moulton & Company, Chicago, entitled "Grain Elevator Construction," is marked for identification "Defendants' Exhibit 28."

By Mr. Hood: The exhibit is objected to as irrelevant and immaterial and as not properly proven.

It is hereby stipulated that the two counsel for the opposing parties visited the office of the vice president of the Illinois Steel Company, Continental and Commercial National Bank Building, Chicago, Wednesday morning, February 2nd, and interviewed Mr. Moe regarding the photographic records, and that if said Moe were called [fol. 313] as a witness he would testify that he has been connected with said company since July, 1907, and that said company maintained current files showing the construction of the steel plant at Gary, these photographs bearing dates and being arranged chronologically in an album which includes duplicates of Photographs K, L, and M, Defendants' Exhibit 17; that said three duplicate photographs have been included in said record since approximately the dates shown thereon; and that three photographic plates corresponding to said photographs are also in its files.

CARL T. ANDERSON, a witness produced, sworn, and examined on behalf of defendants, deposes and testifies as follows in answer to questions by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Carl T. Anderson; fifty-five years; 240 Arlington Avenue, Elmhurst, Illinois. I am a civil engineer with the Webster Manufacturing Company, Chicago.

Q. 2. How long have you been with that company?

A. I have been with the Webster Company twice. For the last two years I have been with the concern, and I was with them in 1892 and 1893.

Q. 3. Are you familiar with Defendants' Exhibit 12?

A. Yes; it is a catalogue of the Webster Manufacturing Company, dated 1901.

By Mr. Hood: Objected to as relating to matter not properly pleaded.

Q. 4. What is the business of your company?

A. They are manufacturers of transmission machinery, grain elevator machinery, and conveying and elevator machinery in general.

[fol. 314] Q. 5. Have you a drafting department?

A. Yes, sir.

Q. 6. Is there anyone now in the drafting or designing depart-

ment of your company who was with it during the period from about 1900 to 1907?

By Mr. Hood: Question objected to, as the witness apparently is not qualified to answer, having stated that he was in the employ of the Webster Manufacturing Company during 1892 and 1893, and during the "last two years."

A. No.

Q. 7. Has your company ever made and sold grain spouts?

A. Yes.

Q. 8. Can you produce any tracings illustrating such spouts?

A. Yes, I can. I have here tracing G-581, dated April 9, 1900, showing grain spouts for the East Side Iron Elevator at Toledo, Ohio. I have got another tracing, G-575, showing a grain spout furnished the Great Northern Elevator at Duluth. I have also got drawing G-1184 showing dock spout furnished to George P. Swift & Co. for use at the Illinois Central elevator E at New Orleans, La. For the same concern I have got drawing G-1180 showing details of the dock spout mentioned on the previous tracings.

By Mr. Hood: No objection will be made to blue-prints of these tracings instead of the originals. Other proper objections will not be waived.

By Mr. Jones: The notary is requested to fasten together the blue-prints of these tracings, and to mark them collectively "Defendants' Exhibit 29."

Q. 9. Have you ever seen an elevator of the East Side Iron Elevator Company, including the apparatus shown on the print G-581? [fol. 315] A. I have seen that elevator a great number of times at some little distance away. I have never examined the house from the inside. I have seen those grain spouts on the house.

Q. 10. Please answer the same question for the remaining three prints.

A. The spout shown on the drawing G-575 I have never seen, being the grain spouts for the Great Northern Elevator at Duluth, Minnesota. The spouts shown on drawings G-1180 and 1184, for the Illinois Central Railroad Elevator E at New Orleans, I have seen, and have visited the house in question.

Q. 11. Please explain the operation of the Toledo apparatus of print G-581.

A. The function of this spout is three-fold. It has got a telescopic action lengthwise of the spout; it is capable of being raised and lowered in a vertical plane, and is also capable of revolving in a horizontal plane by means of a pivot and a boom and a collar on the turn head.

Q. 12. Have you any detail drawings further illustrating these features?

A. I have no detail drawings of that apparatus.

Q. 13. Please explain the operation of the New Orleans apparatus, print G-1184, June 17, 1905.

A. The operation of the spout shown in this drawing is in general the same as the functions of the spout shown in G-581.

Q. 14. Have you any detail drawings of this apparatus?

A. Yes, drawing F-825, dated June 16, 1905. This drawing shows the shop details that were used for manufacturing this apparatus in our factory.

Q. 15. Explain the details by which the spout was permitted to swing.

[fol. 316] A. The spout was permitted to swing by the use of a pivot at the lower end of the boom and by the use of rings with double pivots connecting the spout to the grain outlet spout of the elevator. The upper end of the grain spout on drawing 825, which I mark 1 in red pencil, is provided with a cast-iron ring, which I mark 2, riveted to the upper end of the spout. This ring is provided with two lugs, marked 3, provided with a hole for a round pin. Another ring, which I mark 4, is provided with holes for four round pins, two of which holes are connected to the ring 2 by means of a pin. The other two holes are connected by means of a link 5, fastened to the outlet spout of the elevator; and by this means the spout can be tilted in two directions—outwards or sidewise.

Q. 16. Please explain the boom details on this print.

A. The boom, which I mark 6, is provided with a pivot—this particular detail drawing F-285 I am not particularly acquainted with—at the lower end fastened to a yoke supported from a building or a trestle forming part of the structure of the elevator or gallery. This boom pivot pin, marked 7, on the drawing, is connected to the boom with a bolt running through the boom pivot pin and the lower part of the boom 6.

Q. 17. Where did you get these tracings that you have produced?

A. From our files.

Q. 18. What was the practice of the company with reference to making and filing tracings during the two periods you were with them?

A. The first period I was with the concern it was very small, and we had the ordinary method, consisting of drawings. At present we have a librarian in charge of our files, and these drawings were produced by the librarian at my order.

[fol. 317] Q. 19. You have stated that you had not seen the particular Great Northern apparatus of print G-575; have you ever seen such apparatus elsewhere?

A. Yes, I have seen such apparatus on a number of elevators.

Q. 20. When?

A. The latter part of last year. I saw it on the South Chicago elevators, and have seen any number of them.

Q. 21. Have you ever seen such apparatus used prior to 1907?

A. I have.

Q. 22. In such apparatus what is the part which I mark "R" with a red pencil on this print?

A. That is our turn head ring.

Q. 23. Please sketch the details of this ring on the blue print with red pencil.

A. I have made a sketch showing the connection between the grain outlet spout from the elevator and the turn head part of the grain spout by means of a simple split ring, which permits the lower part to turn around horizontally from the outlet spout from the elevator.

Q. 24. How does the spout move up and down?

A. By means of a hinge H fastened to the turn head and to the upper part of the grain spout.

Q. 25. Does your catalogue illustrate any such device as you have sketched?

A. Yes, on pages 240 and 241 of Catalogue M of 1901.

By Mr. Hood: The volunteered portion of the answer is objected to as irrelevant and immaterial.

Q. 26. You have described two different swivelled connections for grain spouts; have any other types of swivel connections ever been used in this connection prior to 1907?

[fol. 318] By Mr. Hood: Objected to as relating to matter not properly pleaded.

A. Not that I know of prior to that time.

Q. 27. Is the seat for the pivot pin of the boom in print G-1184 in fixed vertical position, or is it movable?

A. Fixed vertical position.

Q. 28. Prior to 1907, do you know whether booms were ever used in which the pivotal support could be raised vertically?

A. I could not specify any instance where I have seen them, because the practice of having a changeable support is so common that I could not be sure of having seen them before that date.

Q. 29. Have you ever seen any other apparatus similar to that shown in detail in this print, other than on the New Orleans elevator?

A. I have.

Q. 30. Were any such instances prior to 1907?

A. I could not be sure about that—I could not make a definite date on that.

Q. 31. In apparatus of which this particular print is typical, was the angle of the boom fixed or could it be changed?

A. Fixed.

Q. 32. Prior to 1907, had you ever seen inclined pivoted booms used in which the angle could be changed?

A. Yes, not for grain spouts, but for other purposes.

Q. 33. Is the general practice in grain spout construction to maintain the boom at a fixed angle, or to provide means to vary it?

A. The usual practice is to leave it at a fixed angle.

Q. 34. What are these additional blue-prints that you have before you?

A. Drawing G-1198 shows a dock spout, the upper end of which is [fol. 319] provided with a swivel ring fastened to the spout by means of a lug, so that the spout can be moved in two directions—horizontally and vertically. Drawing G-1651 shows a dock spout without

any connection to the swivel or turning part of the house shown on the drawing.

By Mr. Jones: These two blue-prints and the previously mentioned print F-825 are also marked to be included as part of Defendants' Exhibit 29.

By Mr. Hood: These blue-prints G-1198 and G-1651 are objected to as not properly identified and as irrelevant and immaterial.

Q. 35. Describe briefly the arrangement at the large end of the spout in print G-1198.

A. The upper part of the spout is fastened by means of a lug to a horizontal ring supported on a casting allowing the ring and the spout to turn together, the spout at the same time, through the lug, being allowed to swing in a vertical plane.

Q. 36. Are these details the same or different from the two swivel connections you have previously described?

A. The details are different, but the general principle is the same as the one described.

Q. 37. Have you ever seen in use apparatus such as shown on these two blue-prints?

A. I have.

Q. 38. Have any such instances been prior to 1907?

A. That is beyond my recollection—I could not identify the date.

Q. 39. Who made the drawings from which these three blue-prints just referred to were made?

By Mr. Hood: Objected to as incompetent, no showing having been made that this witness has any knowledge.

A. I couldn't say.

[fol. 320] Q. 40. I meant what company made the tracings.

By Mr. Hood: Objected to as incompetent.

A. The Webster Manufacturing Company.

Q. 41. Do you know where these blue-prints came from, G-1198 and G-1651?

A. Yes, from the Witherspoon-Englar Company, Chicago.

Q. 42. What were they doing there?

A. Mr. Englar told me that he received those blue-prints from us to use in some litigation at the time these blue-prints were marked "October 7, 1916."

By Mr. Hood: The last answer is objected to as hearsay.

Q. 43. Referring to your Company's Catalogue, Exhibit 12, about what proportion of the devices illustrated therein have actually been made and sold?

By Mr. Hood: Objected to as relating to matter not properly pleaded.

A. All have been made and sold.

Q. 44. I call your attention to an additional blue-print, and will ask if you have ever seen apparatus such as illustrated therein?

By Mr. Hood: Objected to as relating to a print not properly proven.

A. Yes, I have seen such apparatus used.

Q. 45. For what was it used?

A. Similar to those for coal, ashes, stone, or various purposes.

Q. 46. This print is marked "Steel Dock Spout and Connections Coal Handling Plant, Baltimore & Ohio Railroad;" have you seen this particular plant in operation?

A. I have not.

[fol. 321] Q. 47. Were those plants which you have seen observed by you prior to 1907?

A. Yes.

Q. 48. Please compare the operation of those plants you have seen with those of the print.

A. The spout swings in a vertical plane and by details, varying according to the requirements of the plant, may be made to have motion in a horizontal plane.

By Mr. Hood: Answer objected to, inasmuch as the construction is not properly pleaded.

Q. 49. As an engineer, what information does this blue-print give you as to the manner of swinging the spout in a horizontal plane?

By Mr. Hood: Objected to as incompetent.

A. It works on a pivot at the upper end.

Q. 50. Please point out the pivot on the blue-print.

A. Here (witness indicates the "Spout Bolster").

By Mr. Jones: The notary is requested to mark this blue-print for identification "Defendants' Exhibit 30, Baltimore & Ohio Coal Dock Spout."

By Mr. Hood: Objected to as irrelevant, immaterial, not properly pleaded, and as not properly identified.

Q. 51. Can you produce any records with reference to the manufacture or sale by your company of any of the devices you have been testifying about?

A. I have a copy of a bill here, to the Eastern Railway of Minnesota, for spouts furnished the Great Northern Elevator Company, West Superior, Wisconsin, dated April 13, 1901, bill No. 1373, order D-1410.

By Mr. Hood: Objected to as incompetent, the witness not having testified that he was with the company at the period of this bill.

[fol. 322] Q. 52. How do you identify this bill with any particular apparatus?

A. By the notes on one of these drawings—drawing G-575—which has written on it faintly "Great Northern."

Q. 53. Have you any other records?

A. Here is the record of our shop order for spouts furnished the East Side Iron Elevator Company at Toledo, Ohio, dated April 17, 1900. This book is a press copy book of the written orders issued to the shop, page 117 and following pages.

By Mr. Hood: Objected to as incompetent for reasons already stated.

Q. 54. Where did you get these two books?

A. Out of our files vault.

By Mr. Jones: These records are submitted to Mr. Hood for inspection.

Q. 55. Is the party at the Webster Manufacturing plant now who made the original long-hand entries on these records that you have referred to?

By Mr. Hood: Objected to as incompetent, the witness not having shown any knowledge as to who made the records.

A. I don't know whether the man is with the company or not.

Q. 56. Will you please find out?

A. I will.

Q. 57. What other data appears on the bill No. 1373?

By Mr. Hood: Objected to as incompetent.

A. "16 spouts as per blue-print \$110.00. \$1,760.00 all as per letters of March 13 and 15 F. O. B. Chicago, Bellinger spouts."

Q. 58. If there is anything on page 117 of the press copy record relating to grain spouts, please refer to it.

[fol. 323] By Mr. Hood: Objected to as incompetent.

A. A reference made to drawing G-581 as the drawing to which the spouts have to be made up; also "1-12" c. i. dock spout turn head, built with clip ring," and the entire page and following pages.

Q. 59. About how many swivel spout heads permitting movement of the grain spout both vertically and horizontally would you say you had seen prior to 1907?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. I have seen dozens of them, I couldn't specify any exact number.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 60. Mr. Anderson, you have personal knowledge of production of the tracings from which these various blue-prints about which you have testified were made; have you?

A. Just what do you mean? The only knowledge I have is that

these are part of the records of the Webster Manufacturing Company and made by the Webster Manufacturing Company.

X Q. 61. Then, you do not know of your own knowledge that the tracings were made by the Webster Manufacturing Company, or that they were made at any particular date; do you?

A. I do not.

X Q. 62. You were not in the employ of the Webster Company during the years 1900-1907, inclusive, were you?

A. I was not.

X Q. 63. In the construction shown in blue-prints G-1184 and F-825, the ring which you numbered 2, carrying the ears, marked [fol. 324] 3, was rigidly fastened to the upper enlarged end of the grain spout which you marked 1, with the axis of the pins marked 3 at right angles to the axis of the spout and parallel with the face of the building and horizontal; that is right, isn't it?

A. Yes.

X Q. 64. And the ring which you have marked 4 was pivoted to parts which you call "links" 5, these so-called "links" being attached to the inclined delivery spout, which is indicated by dotted lines in print G-1184; is that right?

A. That is correct.

X Q. 65. Well, those parts which you call "links" were rigidly attached to the inclined delivery spout (indicated by dotted lines in print G-1184) and were not capable of any swing relative to that delivery spout; that is right, isn't it?

A. Yes, sir.

X Q. 66. So that those parts 5 were ears rather than links?

A. Part 5—you may call them ears if you like, don't make much difference.

X Q. 67. Now those ears or links were placed so as to afford a pivotal axis which was horizontal and at right angles to the face of the building, thus permitting the ring 4 to pivot about a horizontal axis at right angles to the building; is that right?

A. Yes, sir.

X Q. 68. And at right angles to the pivotal axis of ring 2?

A. Yes.

X Q. 69. And that ring 4 embraced the lower end of the short downwardly inclined delivery spout which was rigidly connected to the building?

A. Yes, sir.

[fol. 325] X Q. 70. The amount of swing of ring 4 about its axis on the ears 5 was quite limited, wasn't it?

A. Somewhat limited, depending on the size of the rings you would use.

X Q. 71. But in any case could that swing amount to anywhere near 90° from the normal horizontal position?

A. I couldn't say that offhand how much it would amount to.

X Q. 72. Well, don't you know as a matter of fact, Mr. Anderson, that that swing was limited, owing to the fact that the ring 4 embraced the lower end of the inclined stationary spout, that limitation

being due to the fact that no matter what the oblation of the ring 4 might be, that ring would contact with the fixed spout and being prevented from swinging through an angle even approximating 180° ?

A. There is a limitation to the swing, but how much I couldn't say offhand.

X Q. 73. Now, in this particular construction ring 4 was oblated along the line at right angles to the pivotal axis which it furnished for ring 3, only an inch and seven-eighths, wasn't it?

A. About two and a half inches.

X Q. 74. You read the external or outside dimension of the oblated portion of ring 4 as thirty-two and seven-eighths, do you?

A. I do, yes.

X Q. 75. The external diameter of the short inclined fixed spout, indicated by dotted lines in print G-1184, approximated the short internal diameter of ring 4, that is approximated twenty-seven and three-quarter inches; didn't it?

A. I don't know; the drawing does not show any dimension on this inclined spout.

X Q. 76. You don't know anything about this particular construction [fol. 326] except what you find on the drawings; do you?

A. I have seen them, but those things are almost hidden when you see them under the hood, that is, a hood to protect them from the weather.

X Q. 77. Now, referring to print G-1184, it is true, is it not, that any swing of the boom-supported delivery spout away from the plane of the drawing of print G-1184 would cause a rise or elevation of the lower end of the boom-supported spout?

A. Yes, most decidedly so.

X Q. 78. With a fixed length of the boom-supported chute, you could not with this apparatus cause the lower end of the boom-supported chute to sweep in a horizontal arc?

A. No.

X Q. 79. In the structure shown in the print of the Baltimore & Ohio coal dock, the external lateral dimension of the fixed inclined chute was four feet, and the inside dimension of the upper end of the swinging chute laterally was about four feet, six and a half inches; wasn't it?

A. Yes.

X Q. 80. And the parts were so arranged that the lower end of the fixed chute, which was four feet wide, projected down into the upper end of the swinging chute, which was four feet, six and a half inches, and that projection amounted to about half of the height of the upper chute, or, in other words, about a foot; is that right?

A. That is correct.

X Q. 81. That arrangement limited the possible lateral swing of the swinging chute to an arc very considerably less than 180° , didn't it?

A. Yes.

Cross-examination closed.

[fol. 327] Redirect examination by Mr. Jones:

R. D. Q. 82. Will you try and find out the present address of the party who made the tracings from which these various blue-prints were made?

A. That is an impossible thing. We have most likely lost the records of this man, except the initials on the tracing.

R. D. Q. 83. Mr. Hood suggested in a question that the ring 4 embraced the spout projecting from the elevator, to which you agreed; explain a little more fully what you meant.

A. The meaning was not that the plane of the ring 4 would be in the same plane as the ring 2. It may be at such an angle as the construction will permit it to be with ring No. 2.

R. D. Q. 84. What would be the relation of the lugs 5 to the structure just referred to?

A. That question I am not able to answer, because our drawings do not show it. It would require a personal examination of the job to find out the exact location, the reason probably being that the holes for these lugs 5 were probably drilled in the field.

R. D. Q. 85. Then when you say "embracing," you do not mean closely surrounding?

A. No, not at all, it has got to be loosely surrounding.

R. D. Q. 86. In actual practice, how far do these grain spouts, such as illustrated in these various blue-prints, swing from side to side?

A. In the New Orleans job the horizontal motion of the spout is limited by the construction of the spout; in the other types referred to the horizontal motion is only limited by the buildings adjacent to it.

R. D. Q. 87. In the New Orleans job how close did the spout swing to the side of the grain elevator?

[fol 328] A. Fold tightly up against the side of the grain elevator in the plane of the spout, with such angle as you would get out of the possible swivel that you have in there.

R. D. Q. 88. Can you give some rough idea of the side swing with the spout up in discharging position?

A. The side swing would be sufficient so that you could discharge grain at either side of the hatchway in the ship. The hatchway will vary all the way from 10 feet to probably 20 feet.

R. D. Q. 89. Referring to your answer to Q. 79, which has just been read to you, explain why the arc would not be horizontal.

A. Yes, you were swinging on an arc.

R. D. Q. 90. The question was, why does the arc not remain in a horizontal plane? For example, if the cable from the top of the boom to the spout were a steel rod, instead of a flexible connection, making a rigid structure out of the boom and spout, would not this rigid structure swing about a substantially vertical axis, passing through the boom pivot and one of the pivots at the upper end of the spout?

A. I think not.

R. D. Q. 91. Does the compass joint at the upper end of the spout permit movement in all directions?

A. It does.

R. D. Q. 92. But your point is that it doesn't permit rotation of the spout about its longitudinal axis with reference to its support?

A. That is it.

Redirect examination closed.

Recross-examination by Mr. Hood:

R. X Q. 93. Mr. Anderson, when you say that this compass joint permits movement in all directions, you do not mean that the joint [fol. 329] is as flexible as it would be if it had a third pivotal axis, and it is for that reason that the delivery end of a boom-supported chute cannot be made to describe a horizontal arc?

A. With this construction it cannot.

Deposition closed.

Signature waived.

St. Louis, Missouri, February 10, 1921.

Met pursuant to notice.

Present: George Bayard Jones, for defendants.

GEORGE W. HERTHEL, another witness called on behalf of defendants, being duly sworn, testified as follows:

Direct examination by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. George W. Herthel; age, forty-one; vice president and treasurer Selden-Breck Construction Company, St. Louis, Missouri.

Q. 2. Will you please describe the nature of the work carried on by this company?

A. We are general contractors and carry on building construction. Mostly fire-proof buildings. We have been in the business since 1904 and do annually a business of about four million dollars.

Q. 3. Are you familiar with the use of chutes for distributing concrete?

A. Yes, I am.

Q. 4. When did you first see such apparatus?

A. We have a particular instance where we used the chutes in constructing a reinforced concrete building. This was back in 1908. I refer to the Tootle-Campbell Building, St. Joseph, Missouri.

[fol. 330] Q. 5. What records have you with reference to this work?

A. We have the regular progress photographs of this work during construction as well as our detailed reports, contracts, subcontracts and so forth.

(Witness produced three photographs marked X Y Z, dated respectively 8-14-08, Aug. 29-08, and 10-16-08.)

Q. 6. Please compare these photographs with Defendants' Exhibit 14.

A. These are copies of the three photographs just referred to.

Q. 7. Where did you get these photographs?

A. These photographs among others were taken at our direction by a local St. Joseph photographer, Edward Pollock. These prints were taken from our progress files.

Q. 8. How long had they been in your file?

A. They were taken during the progress of the work in 1908, taken every two weeks, and have been in our files ever since with the exception of the time they were furnished to Mr. Wilbur Jones a few months ago.

Q. 9. Have you personal knowledge of these facts you have just stated?

A. Yes.

Q. 10. Did you personally see this building under construction?

A. I visited St. Joseph during its construction. I would say about three times, possibly four, I am sure of three visits.

Q. 11. Please describe briefly the distributing apparatus shown in these photographs, Defendants' Exhibit 14.

A. The concrete is mixed on the ground and hoisted to the level where it is needed by use of the tower and the hopper would travel [fol. 331] up and down. The tower is connected with movable spouts which distribute the concrete in the forms where it is needed.

Q. 12. What is this object on the upper end of the movable spout?

A. That is what we call a hopper.

Q. 13. Describe the difference between this hopper and the one which you stated moved up and down.

A. It is merely a bucket like arrangement which is loaded on the ground floor where the concrete is mixed, then it travels up to what we call the distributing hopper. When it reaches that point it is operated by a trip, which dumps it into the distributing hopper, from which it passes down the chute and is distributing where it is needed. A man is usually stationed at this point of the distributing hopper, by which I mean the hopper which is in turn connected with the spouts and this man raises and lowers the trap door controlling the flow of concrete down the spout.

Q. 14. I call your attention to the bottom photograph, Sheet 2, Defendants' Exhibit 2, and ask you if you are familiar with the structure shown therein?

A. Yes, I recognize that as the picture of the Tootle-Campbell Building, St. Joseph, Missouri, under course of construction.

Q. 15. About when would you say that photograph was taken?

A. I would say in the latter part of July, 1908.

Q. 16. In addition to this photograph, what other record have you inspected relating to this building?

A. Our detailed reports and the ledger account, and the original contract with the owner and various sub-contracts.

Q. 17. What year is indicated by these records?

A. 1908.

[fol. 332] Q. 18. Was the distributing hopper always at the same height during the erection of the building?

A. No, as the building progressed upward, the tower was naturally raised so as to allow the conveyor to travel farther, of course, the distributing hopper was naturally raised.

Q. 19. What proportion of the floor area was reached by these chutes that you have referred to?

A. Off-hand, I would say, 90 per cent.

Q. 20. How was it possible to reach the different parts of the floor area?

A. By moving the chute and by swinging the hopper around. The hopper has a place where it discharges and the chutes are fastened under that and in order to put concrete in one end of the building you would have to have the hopper located with the opening pointing that way and the chute hooked on to it in that direction. If you put it at the other end of the building you naturally would have to turn the hopper and turn the chutes.

Q. 21. Explain more fully what you mean by swinging the hopper.

A. I do not mean that the hopper swings, I mean that the chute swings and that the hopper is stationary.

Q. 22. On photograph Y, dated August 29, 1908, what is the purpose of the inclined cable extending from the left-hand side of the tower?

A. That is to guy the tower.

Q. 23. What are the vertical lines hanging from it?

A. It indicates that when they pour the concrete on that portion of the slab they guyed the spout to this line.

Q. 25. Was his apparatus successful in use?

A. Yes.

Q. 26. Have you ever seen a similar apparatus used on other buildings?

[fol. 333] A. Yes, at various times. I can say from 1908 until the present time.

Q. 27. Now, then, in all instances have they been connected with work that your concern was handling?

A. Yes, it is the customary way of handling concrete.

Q. 28. Do you know where the original plates are from which these pictures were taken?

A. I presumed that they were in the hands of Edward Pollock, commercial photographer, who took the pictures. Until recently I naturally thought Edward Pollock the commercial photographer who took these pictures had these negatives, but I recently saw a letter which indicated that he was out of business and that the negatives had been lost or destroyed.

Q. 29. Under what conditions are apparatuses of this character used today?

A. An apparatus of this kind is used wherever there is sufficient area of concrete to justify the expense of putting up a rig of this nature. In other words, if you have not got enough concrete to make it cheaper for you to do it in this fashion, why you would

naturally handle it in another manner such as by labor and by wheelbarrows.

Q. 30. In addition to this catenary suspension type and wheelbarrow distribution, what other methods of distribution are used today?

A. I do not understand your question. There are two methods of distributing concrete, one by simply wheeling it to place and the other by chuting it to place. The chute may be controlled by either swinging to overhead guy line or by boom derrick or by trestles set under it to hold it in place.

Q. 31. How many of these different methods are in use today?

A. They are all in use today and combinations of both of the [fol. 334] various types are used. That combination type is illustrated by the job now going on at Sixth and Olive Streets, this city, where it can be seen the contractor is holding up his chute both by means of trestles and by derrick, operating the cable suspended with the boom arrangements.

Q. 32. Which is more used today?

A. I would say that it is about an even break. It is a matter of choice with the contractor. It depends on what kind of an outfit he happens to have.

Q. 33. During the last twelve years, where have contractors usually obtained their outfits?

A. They buy parts such as the hopper and various machinery and in some cases they buy their towers as well from these companies that make them and also buy metal spouts at times. In a great many instances the towers are built of wood by the contractor, a different one for each job, and the spouts are built the same way, of lumber—wood. Different spouts are used for each job. The hoist and the hopper is carried from one job to another.

Q. 34. In your experience do you find the same problems are encountered in the building of all buildings?

A. No, the same problems are not encountered. The question of the shape of the building and the surroundings of it influence that. You cannot use the same arrangement where you are hemmed in with stacks and guy lines and other buildings, you are bound to adopt some other plan.

Q. 35. What connection did your company have with the Tootle-Campbell Building?

A. We were the general contractors and sublet the reinforced concrete frame, to the Gillsonite Construction Company of St. Louis.

Q. 36. Where did you get the concrete distributing apparatus that you use today?

[fol. 335] A. We bought some of it and made some of it.

Q. 37. Is your practice in this respect similar to the practice you previously discussed?

A. Yes, sir.

Adjourned to February 11, 4:30 p. m.

Met pursuant to adjournment.

By Mr. Hood: No cross-examination.

Signature waived.

St. Louis, Mo., Feb. 10, 1921.

EDWARD C. GERHARD, another witness called on behalf of the defendant, being first duly sworn, testified as follows:

Direct examination by Mr. Jones:

Q. 1. State your name, residence and occupation.

A. Edward C. Gerhard, contractor. I am president of the E. C. Gerhard Building Company; reside 80 Arundel Place, St. Louis County, Missouri.

Q. 2. What experience have you had in this line?

A. Have been building reinforced concrete work since 1908, having made a specialty of large public schools, which were constructed of reinforced concrete work and made thoroughly fireproof.

Q. 3. Are you the same Edward C. Gerhard who executed an affidavit on August 7, 1920, in this case?

A. Yes.

Q. 4. Are you familiar with the chutes for distributing concrete?

A. Yes, sir.

Q. 5. What is your earliest knowledge of such apparatus?

A. Seems to me it was along in 1907 or 1908. It was in 1905 when we got the contract for the Farragut School. While that was [fol. 336] under construction I got it into my head that stuff could be spouted and I really got the idea from the grain chutes and filling stations on railroads, where they fill these tanks. We figure on work off and on and while we were figuring I planned in my head, we always plan in laying out work with this kind of apparatus. The first job that we got, the first school that we got after that, I put it into effect, using wood spouts and wood troughs.

Q. 6. On what school did you first put this apparatus into use?

A. On the Clark School, on Union and Cabanne, St. Louis, Missouri.

Q. 7. What was the date of this work?

A. It was carried on during 1908 and 1909. The construction work was started in March of 1908. The concrete was completed sometime before August prior to August first, I am sure of that, the work being carried on during the summer months. The construction was going on during the summer months. The bids on the Clark School were open January of 1908.

Q. 8. What record have you to fix this date in January, 1908?

A. The record of the contract with the Board of Education.

Q. 9. When did you design the particular apparatus used on this Clark School?

A. About December, 1907, when we were figuring on the contract.

Q. 10. Have you a photograph of the apparatus used on the Clark School?

A. That is similar to the one attached to the affidavit.

Q. 11. You are referring to the affidavit previously referred to and which was filed in opposition to a motion for a preliminary injunction in the Federal Court, Eastern District of Pennsylvania?

[fol. 337] A. Yes, sir.

Q. 12. My question was, have you a photograph of this particular Clark School apparatus?

A. We have not got a photograph of that.

Q. 13. Please describe the apparatus used on the Clark School.

A. That apparatus consisted of a wooden tower by which the concrete was lifted in a bucket from which it was automatically dumped into the hopper and from the hopper it flowed through a wooden chute; said chute being trussed. The first length of this chute was supported from a block and tackle, one end being fastened to the top of the tower and the other end to the farther edge of the chute, the chute being fastened with a swivel spout on the hopper which enabled us to move the chute as the occasion requires. At the end of the chute, which was supported by block and tackle and was further supported by a high trestle and from this trestle additional chutes were extended in order to enable us to reach the point where concrete was needed.

Q. 14. How was this hopper supported?

A. The hopper was supported by struts or outriggers built out from the tower as shown in the photograph of the Franklin School dated May 7, 1910.

Q. 15. Did the hopper remain always at the same place?

A. No; it did not always remain at the same place. We moved the hopper once. When we first placed the hopper we placed it high enough to take the foundations and the first floor slab, later on we raised the hopper in order to take care of the additional stories as the building went up.

Q. 16. How many stories was the Clark School?

A. Two stories and a basement, the Franklin School being three [fol. 338] stories and a basement, each story being approximately fifteen feet in height. This also applied to the basement.

The photograph of the Franklin School is marked Defendants' Exhibit 31, Franklin School Photograph, dated May 7, 1910.

Q. 17. Where did you get this Franklin School photograph?

A. From our records, if that is what you mean.

Q. 18. How long have you had it in your records?

A. Since May 7, 1910.

Q. 19. What is the frame shown in the left-hand side of the Franklin School photograph?

A. That is what we call number 6, that is, a trestle to support or a trestle supporting the ends of the various lengths of chutes.

Q. 20. About how many lengths of chutes did you employ on the Clark School?

A. That is pretty hard to say, we employed about five.

Q. 21. How were these lengths connected with each other?

A. Resting on trestles.

Q. 22. What was the purpose of this arrangement?

A. In order to get a continuous flow of concrete, to enable the concrete to flow to the point it ought to.

Q. 23. What percentage of the floor area could be reached with this arrangement?

A. The entire area.

Q. 24. Aside from the Clark School and the Franklin School, did you ever use a similar apparatus?

A. Yes, we used two at Erie, Pennsylvania, about 1911 and 1912; two at Dallas, Texas, about 1915, 1919.

Q. 25. You have referred to grain elevators, where did you see such elevators prior to 1905?

A. I saw them down here on the levee and also at various stations [fol. 339] along the road while traveling over the country.

Q. 26. Are you familiar with the concrete distributing apparatus used on the American Hotel and Theatre Building in this city?

A. Only from hearsay. That came out in the trial. It came out in the defense we were preparing in a suit for infringement on a spout concrete.

Q. 27. What suit was that?

A. Our company was sued by a corporation of some sort for infringement on spouting concrete.

Q. 28. What became of the suit?

A. The suit dragged for some time and was finally thrown out of court. I think that is the disposition that was made of it.

Q. 29. Where was this suit filed?

A. In the United States District Court, St. Louis, Missouri.

Q. 30. In the Franklin School Photograph, Exhibit 31, block and tackle is shown there, near the upper end of the chute; what is this for?

A. To act as an auxiliary support.

Q. 31. Was this auxiliary used also at the Clark School in 1908?

A. No, sir.

Adjourned.

February 11, 1921—2 p. m.

Present, same as before.

Deposition of E. C. Gerhard Resumed

Mr Hood: The preceding portion of this deposition having been taken in the absence of counsel for plaintiff with his consent, it is hereby agreed that the following objections may be entered with the force and effect as though the same had been entered in due order. [fol. 340] The answer to question 5 is objected to as relating to matters not properly pleaded.

The answer to question 9 is objected to as relating to matters not properly pleaded.

The photograph referred to in the answer to question 16 is objected to as irrelevant and immaterial because it is relating to an apparatus subsequent to the date upon which the patent in suit was issued.

Direct examination resumed by Mr. Jones:

Q. 32. Please produce and submit to opposing counsel the record on which you based your statement about the bids of the Clark School being opened in January, 1908? (Witness examines book.)

A. Should have been February—

Mr. Hood: Objected to as relating to matters not properly pleaded.

That was the day, February 12 was the date that the work was let to the Board of Education, the plans have to come out at least twenty days before the letting. We knew of the job coming out sixty days before. Really began to figure on the job sometime in December.

Q. 33. February 12, what year?

A. 1906.

Q. 34. What school are you referring to in this contract?

A. Clark School.

Q. 35. Are you sure about that?

A. Yes, sir.

Q. 36. When you testified yesterday that the bids on the Clark School were opened in January, 1908, were you testifying from recollection?

A. Yes, sir.

Q. 37. You now wish to correct that answer to read—

A. February 12.

[fol. 341] Q. 38. 1906 instead of 1908?

A. Yes, sir.

Q. 39. In whose handwriting are these entries made on this page?

A. In my own.

Q. 40. When were they made?

A. At the time that we figured on the job, at the time we put the bids in on the work, summary of the bids that we made there. I don't know whether it is proper for me to suggest, you can verify that date by seeing the contract at the Board of Education.

Q. 41. And these entries appear on pages 49 and 50 of this estimate book of yours?

A. Yes, sir.

Q. 42. How do you know that these entries relate to the Clark School?

A. By the location of the building, which is Union and Cabanne.

Q. 43. Explain a little more fully what these items are, appearing on these pages.

A. Various subdivisions of the work.

Q. 44. For example?

A. There would be the cut stone mill work, fireproofing, brick work. Want the whole list?

Q. 45. No, just a few.

A. Slate roof, plastering, painting, sheet metal work, everything that goes to complete a building except the heating.

Q. 47. The date, the year following the entry February 12, looks as if it had been written first "05" and then "06," how do you explain that?

A. I haven't any idea, never anything been done on that, since the work for the Webster School. We got that in the fall in the same year we got this one.

Q. 48. Over on the next sheet, I think.
[fol. 342] A. Yes, sir.

Q. 49. When were the other entries in this book made as to the other buildings?

A. My answer to that is, the work came; after the work came out.

Q. 50. You mean that the entries are made chronologically?

A. Yes, sir.

Q. 51. What are the dates of the entries immediately preceding and immediately following this particular Clark School page, of these particular Clark School pages?

A. The next one—earlier, will be September 14, the dates as stated. I haven't got the date on this, I don't know what job this one is, the Hempstead School, I haven't got the date of that, the date afterward was December 6, 1906.

Q. 52. Please state a little more definitely what the dates are on the following pages, 44 and 45, preceding the Clark School on pages 49 and 50, and the dates on pages 52 and 53 following the same. Give page and date.

A. Page 44, August 10, 1905.

Q. 53. What school was that?

A. Blackstone Investment Company building, Broadway and Chestnut, Pines Building. Page 45, September 14, 1905, is for Miss Curn, the owner, St. Louis and Union Avenue. Page 52 was the Clinton School, December 6, 1906; 53 was the La Salle Building, December 31, 1906.

Q. 54. Having refreshed your recollection from inspecting these records, when would you say you first used the concrete spouting apparatus on the Clark School?

A. I should say it was some time along in about the early part of May, latter part of April or early part of May.

[fol. 343] Q. 55. May what?

A. 1906.

Q. 56. Please make a sketch of the apparatus used at that time.

A. I have made it here.

Q. 57. Please describe it briefly.

A. Well, it consisted of a tower.

Q. 58. You might put numbers on the tower, 1, and so forth.

A. 1 is the tower, 2 was the hopper, 3 outrigger supporting hopper, 4 is the guy supporting chutes, 5 chutes, 6 trestles supporting chutes. Anything else you want?

Q. 59. How does the concrete get to the hopper?

A. In a bucket which runs up inside the tower, 7 is the concrete bucket.

This sketch is marked for identification Defendant's Exhibit 34, Gerhard sketch of 1906 Apparatus.

Mr. Hood: Objected to as not properly pleaded.

Q. 60. You referred yesterday to a suit against you; have you made inquiry to learn further data of this suit?

A. Yes. I called up our attorney's office, the attorney that defended the suit.

Q. 61. Who?

A. Mr. Cornwall gave me the data on the suit, who the parties were and the nature of the suit.

Q. 62. Go ahead and tell what you know about it.

A. The suit was brought by the Concrete Appliance Company against the E. C. Gerhard Building Company and Board of Education of the City of St. Louis, jointly, and claimed there was an infringement on the Callahan patent No. 948,719. The claims were on 1, 2, 5, 13 and 14. We entered our appearance on March 19, [fol. 344] 1910, and filed the answer. The suit was dismissed for want of prosecution upon the calling of the docket on September, 1911.

Mr. Hood: Answer objected to as not the best evidence.

Q. 63. What was your connection with the E. C. Gerhard Building Company?

A. President of it.

Q. 64. Since the dismissal of this suit against your company, have you continued to use your previous apparatus?

A. I have to a certain extent, my own features of it.

Q. 65. Have you ever been sued since for infringement?

A. No.

Q. 66. Please refer to the telephone book and give the address—the location of the Clark School as shown therein.

A. "Clark School, Union and Cates," runs from Cates to Cabanne, Union and Cates Avenue, Cabanne.

Cross-examination by Mr. Hood:

X Q. 67. You have intended to illustrate by this sketch which has been marked Defendant's Exhibit 34 the same sort of apparatus as is illustrated in the photograph which has been marked Defendant's Exhibit 31, have you?

Mr. Jones: I suggest the witness be shown the exhibits in question.

(Two exhibits were handed to witness.)

A. Yes.

X Q. 68. It is your recollection that the structures were substantially identical, is it?

A. As to construction, you mean as to the general construction of it?

[fol. 345] X Q. 69. Yes.

A. I understood you to say what?

X Q. 70. Read the last question.

(Last question read.)

X Q. 71. It is your recollection, is it, that the concrete chuting apparatus which you say you used in connection with the fabrication of the Clark School was substantially the same as that which you say was used in connection with the fabrication of the Franklin school and which is shown in the photograph, Defendants' Exhibit 31; is that right?

A. Yes.

X Q. 72. Did you take any photographs of the apparatus that you say you used in connection with the Clark School?

A. No, sir.

X Q. 73. I suppose you thought this apparatus was pretty ingenious one when you finished it, did you?

A. Well, yes, I don't know how to answer, just what you are driving at.

X Q. 74. Please give the names and addresses of any persons you may now recall who saw the apparatus that you say you had in use in connection with the fabrication of the Clark School at the time that apparatus was in use at the Clark School site.

A. Men that were working on the work, and one man in particular, superintendent, who is still in our employ, Tom Karas, he is not in town, in West Frankfort, Illinois.

Mr. Jones: Temporarily?

A. Be there for another year.

X Q. 75. Anybody else?

A. I said the men that were working on the building, I don't remember their names now, names and addresses.

[fol. 346] X Q. 76. Tom Karas is the only man that you now recall who had knowledge of that apparatus?

A. Yes.

X Q. 77. Still in the employ of your company?

A. Yes.

X Q. 78. You have referred to the Webster School; when was that building erected?

A. Contract was let on the sixth day of—bids were opened on the sixth day of December, 1906, I believe, that was the date right after the Clark, page 52 or 54.

X Q. 79. Was there any concrete work on this school?

A. Yes, sir, wasn't spouted, though.

X Q. 80. On page 51 of this record book, aside from entries somewhat similar to the entries on page 50, which related to the Clark School, to what do the entries on page 51 relate?

A. 51 relates to the Clark School, it is the same thing.

X Q. 81. On page 50 I see an entry, fire-proofing, \$23,585.00, and on page 51 I see the entry, fire-proofing, \$23,546.00.

A. \$23,585.00 and \$23,546.00 are the same thing, same school. Here is eleven and something for excavation; we let it at \$8,250.00, \$3,275.00.

X Q. 82. Is your recollection that the entries on page 50 were your estimates and that the entries on page 51 are indicating the amounts to which the subcontracts were actually let.

A. Actually let, yes.

X Q. 83. Entries on pages 46 and 47 relate to Hempstead School?

A. Yes, my recollection is that Hempstead—is that it was let either in November or December of 1905, which is a few weeks prior to the Clark School.

X Q. 84. The record book doesn't contain any date in relation to the Hempstead School?

A. No.

[fol. 347] X Q. 85. What became of the apparatus which you say you used in connection with the Clark School?

A. The tower was wrecked, the hopper and the bucket were saved for other work.

X Q. 86. You did not again use an apparatus comprising a tower and hopper and chutes until you built the Franklin School in 1910; is that right?

A. I didn't say that, no. I don't know off-hand that I didn't, I know I didn't say that.

X Q. 87. Well, as a matter of fact, did you use the apparatus or similar apparatus between the time you say you used it on the Clark School and the time you say you used it in connection with the Franklin School?

A. I have to look it up. (Examines book.) No, sir, the high school where it was let at—the Soldan High School.

X Q. 88. What do you mean by your reference to the Soldan High School?

A. I was under the impression in my former deposition I used the dates of January 10, 1908, as referring to the Clark School.

X Q. 89. Whereas in reality that date—

A. Referred to the Soldan High School.

X Q. 90. And in the Soldan High School, did you have any concrete work?

A. We did not build the Soldan.

X Q. 91. Simply estimated on it?

A. Yes, sir.

X Q. 92. Didn't get the contract?

A. Didn't get the contract.

X Q. 93. How many school buildings did you build between the time you built the Clark School and the time you built the Franklin School?

A. Built one at Gary, Indiana, 1909.

X Q. 94. Did that have concrete work in it?

[fol. 348] A. At Gary?

X Q. 95. Yes.

A. Yes, sir.

X Q. 96. Did you do any other building between the time you built the Clark School—

A. Yes, sir.

X Q. 97. —and the time you built the Franklin School?

A. Built residences or some flats, no reinforced concrete buildings.

X Q. 98. Any of those buildings have concrete foundations?

A. Yes.

X Q. 99. What was the size of the largest building built in that period?

A. I should say off-hand approximately 120 x 200, two-story and a basement.

X Q. 100. Concrete foundation?

A. Yes.

X Q. 101. What kind of walls?

A. Rubble walls.

X Q. 102. What do you mean by rubble?

A. Stone work.

X Q. 103. What kind of floors?

A. Joist construction—wood floors.

X Q. 104. What is your recollection of the date when you completed the erection of the tower in the Clark School apparatus?

A. I should say it would be about the first or middle of April.

X Q. 105. What year.

A. 1906.

X Q. 106. When did you pour the first concrete with this apparatus?

A. Say about the middle of April, poured the foundations there, very heavy foundations.

Mr. Hood: That is all.

[fol. 349] Redirect examination by Mr. Jones:

R. D. Q. 107. Prior to your testimony yesterday, did you glance over this affidavit to refresh you recollection as to the dates?

A. Yes.

Mr. Hood: Objected to as immaterial, the affidavit is not in evidence.

R. D. Q. 108. You described yesterday the apparatus used on the Clark School; please read your answer to Q. 13 and state whether or not, in view of your mistake in having originally used the date of Soldan instead of Clark School, that description applies accurately to the Clark School apparatus.

(Witness reads answer.)

A. Yes.

R. D. Q. 109. Then, in your deposition yesterday, you were in fact referring to the proper school, but merely mistaken as to the date; is that it?

A. Yes, sir.

R. D. Q. 110. Why did you not use your concrete distributing apparatus on the Webster School?

A. On account of the position that the building was in. We had built and was constructing in front of it, an old building which had been wrecked, but we completed it. We completed the new portion before the old was wrecked.

R. D. Q. 111. Was the apparatus used on the Clark School successfully?

A. It was.

R. D. Q. 112. You said that the apparatus of Exhibits 31 and 34 are substantially the same; please point out any differences which may exist.

Mr. Hood: The question is objected to as immaterial.

[fol. 350] A. You want to know if there was any substantial difference?

R. D. Q. 113. Just point out any differences which existed.

A. On the Franklin School we used, in addition to the one guy line supporting the end of the chute, we used an additional steel cable extending to the extreme corners of the lot, expecting to carry our chutes from this steel cable. When we got to work, however, we found that, on account of the weight, that the steel cables would slacken when the aggregate got in the chutes and it would stop up the flow of the concrete, and when we found this condition prevailed, we abandoned the steel cable as a support for the chutes.

R. D. Q. 114. The next time that you used the apparatus of this general character, of what did that apparatus consist?

A. Practically the same thing that we had on the Clark School.

R. D. Q. 115. And would that apparatus be fairly illustrated in Exhibit 34?

A. Yes.

R. D. Q. 116. Is there anything in the figures of your estimate of the Clark School on page 49 of the book, previously referred to, which reminds you of the kind of concrete distributing apparatus used on that school?

A. Nothing to show the apparatus, no.

R. D. Q. 117. Please answer the question. Read the question.

(Question read.)

A. Have to answer it the same way.

R. D. Q. 118. How does your estimate for the concrete work on this job compare with previous estimates for work of like character?

A. This is the first job of this kind that we did ourselves—before that we had always sublet.

[fol. 351] R. D. Q. 119. In making your estimate, did you attempt to make any comparison between the cost of distributing concrete by your proposed new apparatus as compared with any other methods in use at that time?

A. Well, when the work first came out, I figured around to see, to do away with certain amount of labor, and all that class of work that we had been doing. We kept tab of the work as it went along and we had that data and we felt by eliminating all the labor that we could and doing it by machinery, we could save money by it and we based our figures on that, expecting to use this kind of an apparatus.

R. D. Q. 120. What figures, on pages 49 and 50, relate to the concrete?

A. 23—fireproofing.

R. D. Q. 121. Fireproofing, what is the rest of it please?

A. That is all, fireproofing.

R. D. Q. 122. Just a minute, you started to read some figures?

A. Fireproofing, \$235.85.

R. D. Q. 123. What is the "revised estimate" of 18315 immediately following?

A. Well, I don't know that that is a revised estimate, that isn't a revised estimate. I don't know the reason for them now, so long ago. Here is a figure and here is what the work was let for (witness indicated the estimate column of page 49) that corresponds (witness indicates the estimate column of page 51).

R. D. Q. 124. About what proportion of the concrete work of the Clark School was placed by the use of your apparatus Exhibit 34?

A. All of it.

R. D. Q. 125. On how many floors was concrete used?

A. There were three slabs; first, second and attic.

R. D. Q. 126. Please explain what you mean by slabs.

[fol. 352] A. Floor slabs, carry the floors.

R. D. Q. 127. You mean that the first and second floors and the attic were of concrete?

A. What formed the support for the first floor was a concrete slab and what formed the support for the second floor was a concrete slab; and the support for the attic was also a concrete slab. These concrete slabs cover the entire area of the building.

R. D. Q. 128. Was your concrete distributing apparatus used on the Gary School?

A. It was not.

R. D. Q. 129. Why not?

A. On account of the condition of the job, condition of the work, we tried another method there, wheeling.

R. D. Q. 130. What was the condition of the work that required wheeling?

A. The ground was in very bad shape.

Mr. Jones: Photographic reproductions of pages 49 and 50 are marked for identification Defendant's Exhibit 35, Photographs of Gerhard Estimate Book. It is stipulated that these photographs may be used with the same force and effect as the original record.

Mr. Hood is asked to state on the record how many suits have been filed in the past on this same Callahan patent involved in the present suit and the respective courts in which such have been filed.

Mr. Hood: I am not able to state from memory. There was one suit which is referred to in the bill of complaint—there is the present suit; there was a suit filed a number of years ago against the Wither-spoon-Englar Company, in Chicago, which was not brought to trial because I was informed that the defendant had ceased infringing operations; there was a suit brought in the Western District of Pennsylvania against a party by the name of Hogg, the structure being one [fol. 353] which was produced by the same party who produced the apparatus which was involved in the suit referred to in the bill of complaint, and the decree in that suit was entered for plaintiff following the mandate of the Circuit Court of Appeals in the Sixth Circuit in the suit referred to in the bill of complaint; there was also a suit in the Western District of Missouri against a party whose name

was, I think, Gray, in which a consent decree was entered. I think these are all the suits of which I have had any knowledge; at least, I do not now recall any others. I never had any knowledge of the suit referred to by the present witness until today.

Mr. Jones: Did not you and your partner Mr. Schley take some part in connection with a suit brought in the Canadian courts back in 1913?

Mr. Hood: I am not on the witness stand, and I see no reason why I should respond to interrogatories by order of counsel for defendant in this case. It is a fact, however, both Mr. Schley and I were associated with the defense in the Vancouver suit.

R. D. Q. 131. In answer to question 13 you stated that the chute on the Clark School was trussed, will you please indicate this feature on your sketch Exhibit 34, if that statement is correct?

A. I have done so, and marked it figure 8.

R. D. Q. 132. About how long was this trussed section, if you remember it?

A. I should judge about thirty-five feet, first section.

R. D. Q. 133. Of what was it built?

A. Wood.

R. D. Q. 134. Of what was the truss made?

A. Wire rods.

R. D. Q. 135. You stated in this same answer that the chute was fastened by swivel spout on the hopper which enables you to move the [fol. 354] chute as the case required. Explain more fully in what direction you would move it.

A. With the swivel arrangement we could move the spout in a radius of forty-five degrees, I think you would call it, half, yes, forty-five degrees.

R. D. Q. 136. What do you mean by that "half?"

A. Half a circle.

R. D. Q. 137. During such movement, where would the trestle 6 be?

A. Trestle 6 would be moved with it as we moved the spout, we would carry the trestle on it.

R. D. Q. 138. In such cases was the weight of the chute carried by the trestle or the cable or by both?

A. Carried principally by the cable or guys as I call it.

R. D. Q. 139. Explain a little more fully how the weight was carried principally by the cable 4 or guy.

A. The figure 4 indicates the cable or guy line which was run through a block which was fastened at the tower at the top of the tower and the other end of the line reeved through a block fastened at the further end of the chute. The block support reeved in such a manner that when we wanted to raise or lower the end of this truss, we would turn it at the drum figure 9.

R. D. Q. 140. What I mean was what was the arrangement whereby the weight was carried principally by the guy as distinguished from the trestle?

A. I think my other answer covers that. The blocks and tackle through the line was reeved, one end being fastened to the outer edge

of the truss and other end at the top of the tower with a line running down to the drum. When the drum was turned it would pull the top up and the spout would practically hang of its own weight.

R. D. Q. 141. You mean it would hang clear of the—of any support furnished by the trestle 6?

[fol. 355] A. 6, trestle 6 was principally used, had to be there, in order to take extension chute 5 from the main chute.

R. D. Q. 142. Then when you would swing the main chute 5 during such swinging its weight would be carried by the guy 4, is that it?

A. That is it, yes, I have marked the extension chute 5a.

R. D. Q. 143. About how high was the tower on this Clark School apparatus?

A. I should judge about 110 feet.

Recross-examination by Mr. Hood:

R. X Q. 144. Who was the architect on the Clark School?

A. William B. Ittner.

R. X Q. 145. What was his address?

A. Ninth and Locust, Board of Education Building.

R. X Q. 146. Is he still living?

A. Yes, sir, still there.

R. X Q. 147. Was he on the job during its course of erection?

A. You mean, was he there all the time?

R. X Q. 148. From time to time as architect would be.

A. From time to time, yes.

R. X Q. 149. Did the architect have an inspector on the job?

A. Yes, sir, all the time.

R. X Q. 150. Who was the inspector?

A. I don't remember that Mr. Hood, I don't remember who the inspector was there.

R. X Q. 151. Was the concrete work done by your company or by subcontractor?

A. By our company.

R. X Q. 152. What was the size of the building, that is, the ground area, approximately?

[fol. 356] A. Pretty hard to say, I should judge about 110 by pretty near 400 feet to the best of my recollection.

Redirect examination by Mr. Jones:

R. D. Q. 153. Where is the Soldan School?

A. Across the street from the Clark, at Union and Kensington.

Signature waived.

St. Louis, Missouri, February 11, 1921—10 a. m.

SAMUEL C. BLACK, another witness called on behalf of the defendants, having been first duly sworn, testified as follows:

Direct examination by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Samuel C. Black; fifty-five years old; I am an architect; present occupation, draftsman for the Board of Education, City of St. Louis, with the building department.

Q. 2. Where were you employed in 1907?

A. Employed by Fred C. Bonsack.

Q. 3. On what structure were you employed during that year?

A. Most of the time I was on the American Theater and Hotel Building.

Q. 4. Did that—was that building of concrete construction?

A. It was of steel frame and concrete floor, reinforced concrete floors and some reinforced concrete partitions around elevators and around the fireproof stairway.

Q. 5. What apparatus was used for distributing the concrete on that building?

[fol. 357] A. The concrete was mixed by a mixer in the basement, and then hoisted to the height required at the time, on an elevator tower or hoist and dumped at that point, into a funnel attached to this same hoist, funnel-shaped there, and from that into a cylindrical tube about eight inches in diameter, sections about six feet long I guess you would say. These tubes were formed with hubs similar to the cast-iron soil pipe; of course, these were of wrought metal. They were secured together by means of wires through rings which were attached to the tubes themselves. These were supported mainly to a cable which was attached to the tower onto the end at the lower point, to some of the steel work of the building which was; the angle of this cable, was moved from time to time as required to reach certain points of the building. There were other supports, to my recollection about two, wood trestles to take some of the weight off the cable. If I am not clear on the matter of tubes, I can sketch you what my recollection of it is.

Q. 6. Please make such a sketch.

(Witness makes sketch.)

Q. 7. What proportion of this building was built by the use of this apparatus you have described?

A. The reinforced floors, reinforced concrete floors.

Q. 8. The question was what proportion.

A. I hardly know just how to answer that question. All floors were reinforced concrete throughout, that is, the structure floors.

Q. 9. What proportion of the work was done with this apparatus that you have just described?

A. Reinforced concrete work and the fireproofing of the hotel.

Q. 10. All of it?

A. All of the reinforced concrete but some of the fire-proofing [fol. 358] was done by hand where it was not handy to reach by chute, out of the way places in the lower floors had to be done by hand, small portions.

Q. 11. Who designed this apparatus you have described?

A. I was told by the foreman for the Gilsonite Construction Company, who we got on that building that it was his invention, Mr. Bankes.

Q. 12. His full name is Herman A. Bankes?

A. Bankes is the proper last name, I believe, Herman A. are his initials.

Q. 13. From what you know of Bankes, what can you say as to his qualifications as an inventor?

Mr. Hood: Objected to as irrelevant, immaterial and incompetent.

Q. 14. Just answer it any way regardless of the objection.

A. Mr. Bankes, I recall conversations which I had with him, but also by his arrangements in various places, specially in the control of the cars which he used to carry the material to the mixer, showed himself to be a very ingenious man, generally handled the work in a very capable way.

Q. 15. Describe a little more fully the car arrangements you refer to.

Mr. Hood: Objected to as irrelevant and immaterial.

A. The materials were placed in bins in the basement. These bins were loaded from the ground floor by wagons and dumped the material into them. The lower portions were funnel-shaped and under this they run steel tracks to carry the cars, were constructed to carry the proper amount of materials for a "mix," one batch as we call it. These traveled mostly by gravity. Started with loading it [fol. 359] with the material and give it a roll and by its own momentum, from there to the next bin, and from there on, rolled to the mixer. From that point, after being emptied, the car was pushed up a height sufficient to get the momentum to come back in its routine, regular run. This came back pretty fast and necessitated some means of checking the speed of the car. Bankes immediately got busy and arranged a check by means of using ordinary one-inch plank, a series of them, so that the car would strike them one after the other and it came practically to a standstill.

Q. 16. On what building was this apparatus used?

A. American Hotel and Theater Building.

Q. 17. Do you know when Bankes first got up the invention of the chuting arrangement you have referred to?

A. Only what he said to me. In our talk he said that he had invented that system and his firm was profiting greatly by it and it was his intention to take out a patent on the arrangement, get some of the profit himself.

Q. 18. Do you know when he made the invention?

A. That was claimed to have been made sometime previous to this job.

Mr. Hood: Object to that as hearsay.

Q. 19. American Theater job?

A. Yes, sir.

Q. 20. About when was the concrete work begun on the American Theater Building?

A. Have to give you that approximately, of course. The main structural concrete work must have been finished at the latter part of 1907. One point which impressed my mind was the opening of the theater. At that time all the structural work was done, the finishing was only in the theater.

Q. 21. When did the theater open?

A. Opened in February, 1908, I think the 17th.

[fol. 360] Q. 22. I call your attention to Defendant's Exhibit 1 and ask if this article describes the building you have been talking about?

A. Yes.

Q. 23. Were you fixing the date of February, 1908, by your recollection, or have you previously seen this photograph?

A. No, this was impressed on my mind very strongly, as being practically driven by the owners to open that theater at as early a date as possible, give them our promise that they should have it by that time. Of course, I had made strenuous efforts to do it. I remember it for that reason. Didn't trouble to thank me afterwards either.

Q. 24. You refer to a funnel-shaped arrangement for receiving concrete on the tower, how was this device supported?

A. It was attached to the tower, to the proper height, for the time, moved when it had been reached.

Q. 25. Why did it have to be moved?

A. To reach upper floors, moved about every, possibly, three floors.

Q. 26. Do you know anything about the apparatus on photographs A and B, Defendant's Exhibit 2?

A. There is evidently the roof of the building. The tower in this case extends above on the structure.

Q. 27. Did this building have more than one roof?

A. No, only one main roof and the roof over between pent-houses on the top, very small between pent-houses over elevator.

Q. 28. Where was the theater with reference to the rest of the building?

A. It was in the eastern portion of the building.

Q. 29. Did the theater have a separate roof?

A. No, sir.

[fol. 361] Q. 30. About how many stories did that building have?

A. Twelve stories.

Q. 31. The photographs show the main roof of this main twelve story building?

A. Yes, sir.

Q. 32. Photographs A and B, there are some inclined members running downwardly from some part of the structure, were these inclined members used throughout the erection of the building?

A. No, they are not necessary below.

Q. 33. I don't believe you answered my previous question about when the concrete work was begun.

A. The concrete work was—the reinforced concreted work was begun shortly after June 8, 1907.

Q. 34. When was the first time you ever saw chutes of this character running from the tower to distribute concrete over various parts of a floor area?

A. I believe this was the first instance that I had noted, at least first completed one.

Q. 35. What impression did this apparatus make on you?

A. Greatly interested in it on account of its ingenuity and efficiency.

Q. 36. Was there any discussion about this apparatus?

Mr. Hood: Objected to. It is immaterial, discussion between this witness and parties not of record.

A. Quite a bit.

Q. 37. What was the substance of discussion, was it favorable or unfavorable?

Mr. Hood: Objected to as irrelevant, immaterial and incompetent, also calling for a statement of conclusion.

A. Favorable.

[fol. 362] Q. 38. Was such apparatus ever used again?

A. Similar to that, has been used almost continuously from that time to this. Various changes in it. Open chutes, wooden troughs, all kinds of things.

Q. 39. Were there any special restrictions in connection with excluding the public from this building during its erection?

A. Yes, we undertook to keep out the general public. This being what we called, at that time, a sublet job, a considerable number of people who had a right to be there.

Q. 40. The question was intended to relate—the question asked whether there were special restrictions as distinguished from the usual restrictions on such buildings?

A. Not at all.

Q. 41. Can you answer that more fully, "not at all" doesn't make sense there? Was this apparatus enclosed in any way to prevent inspection, from other buildings?

A. Not outside of the frame of it, but later after the walls were up, couldn't see anything below that. It was located towards the central portion of the building.

Q. 42. Where did the contractors usually get the various appliances that they used in carrying on their work?

Mr. Hood: I object to that as incompetent.

A. I hardly know just what you mean, Mr. Jones. The tower itself was built there on the job, ordinary lumber purchased for that purpose. The mixing apparatus was bought from some firm in that business. That would apply to all the machinery connected with it.

Mr. Hood: I object to that as hearsay.

Q. 43. Are you talking now about building work in general or some particular building?

A. All buildings of that description.

Q. 44. What was the consistency of the concrete used on the American Theater Building?

[fol. 363] A. To the best of my recollection that was what we called, one, two, four, mix.

Q. 45. Does that indicate the consistency?

A. That is the material, proportion of material from the sand and gravel in the mixer, thrown in the mixer. Sufficient water to make it flow freely in the spouting.

Q. 46. Did you see the St. Louis Coliseum under erection?

A. Yes, sir.

Q. 47. Can you identify the photographs, Defendant's Exhibits 3 and 22?

A. Those are pictures of the Coliseum building.

Q. 48. Did you personally see the concrete distributing apparatus used on that building?

A. Not particularly, I noticed it however.

Q. 49. I call your attention to Defendants' Exhibit 4, sketch by Woodman, and will ask you if the slope of the pipe or chutes therein is in accordance with your recollection of the slope of the American Theater chutes?

Mr. Hood: I object to that as incompetent.

A. No, sir.

Q. 50. Go on and explain it a little more fully.

A. They are shown too steep, would not be practical chuting the concrete at that angle.

Q. 51. I call your attention to Defendant's Exhibit 13, Webb sketch, I will ask if you ever saw this exhibit before?

A. No, I don't remember of seeing it.

The notary is requested to mark the witness' previous sketch, Defendant's Exhibit 32, Black Sketch of American Theater Pipes.

Q. 52. Please add to this sketch, Exhibit 32, the rings and wires you previously described.

(Witness does so.)

Q. 53. You state that the slope of the pipe in Exhibit 4 is too steep. [fol. 364] Sketch on this same sheet, the slope approximately as you remember it; sketch enough to show about the slope.

A. I have done so.

Q. 54. Was this slope always the same throughout the building?

A. No, sir, it varied to meet the necessity of the work. These tubes and pipes were quite flexible at the joints, only being about six feet long, permitted quite a swing without changing it.

Q. 55. Do you know Edward C. Gerhard?

A. Yes, sir.

Q. 56. Have you ever seen any of the concrete distributing apparatus which he claims to have used in building schools in St. Louis?

A. Yes, sir, I have seen them, never paid much particular attention to them. One thing I particularly noticed about his was a steel boom which he erected on one of the schools, not certain whether he used it on all the work he did or not.

Q. 57. You recall ever seeing the apparatus of Defendant's Exhibit 31, photograph dated May 7, 1910?

Mr. Hood: Objected to as irrelevant and immaterial, and as relating to certain structures subsequent to the date of the application upon which the patent in suit was issued.

A. I can't identify that particular thing.

Cross-examination by Mr. Hood:

X Q. 58. You consider Mr. Bankes whom you have mentioned, as a man of rather unusual ingenuity?

A. Yes, sir.

X Q. 59. In your opinion he possesses and exercises a great deal more ingenuity than the average workman or superintendent?

[fol. 365] A. Yes, sir.

X Q. 60. You were asked certain questions about photographs A and B of Defendant's Exhibit 2, and you stated that certain inclined members which were found in those photographs were not used below. Just what do you mean by that?

A. Below we had the steel frame work to brace to.

X Q. 61. It is a fact, isn't it, in the apparatus which was used in erecting the American Theater Building, the hopper, or, what you call the funnel, was hung out on one side of the tower and was always braced or partially supported at its outermost parts by members which extended over and were supported by the steel framework of the building?

A. That would not necessarily be true.

X Q. 62. I am asking what the fact was in that particular structure?

A. It was not always true, in some cases it was supported entirely at the tower.

X Q. 63. As a general rule it was supported—additionally supported by the steel framework, was it not?

A. No, because that would be a little bit awkward position.

X Q. 64. Are you perfectly sure of that?

A. More convenient for them to have it free.

X Q. 65. The opinions which you just expressed relative to the ability of Mr. Bankes, were also held by you relative to Mr. Bankes in 1907?

A. Yes, sir. That is when I formed the opinion.

X Q. 66. Are you sure of the date when they began to distribute concrete for the reinforced concrete portions of the American Theater Building?

A. I am, absolutely, that it was shortly after June 8, 1907.

X Q. 67. How did you set that date?

[fol. 366] A. Because on that date that was the date of the signing of the contract between the Real Estate and Financial Company, and the Gilsonite Construction Company.

Mr. Jones: The tracings constituting part of the contract are now on the way to this office and were not sent earlier as the architect was out of his office. It will be referred to as soon as received. It will be submitted to opposing counsel as soon as received.

X Q. 68. What do you mean shortly after?

A. Why, next few days, for this reason, that we were trying to expedite matters as much as possible, and these men had been for quite a while talking over the contract, and arranging it, and the minute that contract was signed, they were informed to get busy at once, which they did.

X Q. 69. They had to excavate for the foundation, didn't they?

A. That was all done before.

X Q. 70. The contract to which you have referred was the general contract for the building?

A. It was the contract between the Gilsonite Construction Company and the owners for the erection of the reinforced concrete work.

X Q. 71. Was this Banks' apparatus, if you recall it, used in pouring concrete for the foundation?

A. No, sir.

X Q. 72. How long did it take to put that foundation in?

A. About two months, with the excavation and foundation.

X Q. 73. And after the foundation was in, they started to put up the steel framework?

A. Yes, sir.

X Q. 74. How far up was the steel frame before they begun to use the Banks apparatus which you have described?

[fol. 367] A. Probably four stories, that is when—I am indefinite on that.

X Q. 75. How long did that take?

A. About, probably a month.

X Q. 76. So that it was probably sometime in August, 1907, before the foundation was completed?

A. No, sir, just told you that the foundations were completed before the Gilsonite signed the contract.

X Q. 77. Was any of the steel framework up before the Gilsonite contract was signed?

A. Yes, sir.

X Q. 78. When did they first begin to use the Banks apparatus which you have described?

A. As soon as it was installed, which, as I said before, the installation was begun within a few days of the signing of this contract.

X Q. 79. You are not sure of the time when the apparatus was first used?

A. Couldn't give you the exact day, no, sir, quite busy at the time.

Mr. Hood: That is all.

Redirect examination by Mr. Jones:

R. D. Q. 80. You stated you couldn't give the exact date when the Bankes apparatus was actually put into use, was it a matter of days, weeks or months after the signing of the contract of June 8, 1907?

A. Not over a week.

R. D. Q. 81. Did you ever know Henry O. Webb or Faunt M. Woodward in connection with the building?

Mr. Hood: Objected to as not proper examination.

A. I remember Mr. Woodward who was the man in charge of the [fol. 368] work by the Roebling Construction Company. They did the metal lathing and furring throughout the building. I don't remember Webb distinctly.

R. D. Q. 82. Do you know whether or not there was such a man on that job?

A. I am not positive, to swear to it, no, sir.

R. D. Q. 83. During the erection of that building, about how high was the hopper above the floor being poured?

A. It varied from one to three stories, or rather from three to one floor.

R. D. Q. 83a. Who was the architect of the American Theater Building?

A. Mr. Bonsack; he is deceased.

R. D. Q. 84. Who is carrying on the work of his office?

A. His son.

R. D. Q. 85. Do you know his name?

A. Fred C. Bonsack.

R. D. Q. 86. Mr. F. C. Bonsack having arrived with the records from his office, will you look them over and state if you can identify them?

A. I have here a dozen tracings of the American Theater Building, one of them being dated, having the notation, "revised, May 10/07," and entitled that it is a hotel building for the Southern Real Estate and Financial Company and erected on the northeast corner of Seventh and Market Streets, F. C. Bonsack, architect—basement plan. This tracing also bears on it the signature identified with the contract between the Southern Real Estate and Financial Company and the Gilsonite Construction Company, contractor of the reinforced concrete work, June 8, 1907.

R. D. Q. 87. Whose handwriting is this date?

A. Joseph E. Norton and P. J. Clifford.

R. D. Q. 88. Who are the two latter parties?

A. Painters, contractors for the painting of this building.

[fol. 369] R. D. Q. 89. Does your handwriting appear elsewhere on this tracing?

A. Yes, I filled in the dates for several contracts.

R. D. Q. 90. When?

A. The date it was signed. The dates appearing therein, including the date of June 8, 1907, previously mentioned in my testimony. I have also a book labeled, "Contracts." Pages 76 and 77 are records of contracts for the erection of the American Theater and Hotel Building, Seventh and Market Streets. On page 77 is a record of the principal contract of the Gilsonite Construction Company, dated June 8, for \$55,000, also two extras.

R. D. Q. 91. You don't know personally about these entries?

A. No, sir.

R. D. Q. 92. From your knowledge of the work, can you identify any of the contractors whose names appear on these two pages as having been connected with the work?

A. I believe all of them.

Recross-examination by Mr. Hood:

R. X Q. 93. Did you make any of the entries in this book on pages 76 and 77 to which you have referred?

A. No.

R. X Q. 94. Did you see them made?

A. No.

R. X Q. 95. Do you know who made them?

A. Made by the stenographer, Mr. Bonsack's office.

R. X Q. 96. You think they were made by the stenographer?

A. I know her handwriting sufficiently well.

Mr. Jones:

R. X Q. 97. When did you first see this book?

[fol. 370] A. As early as 1907, probably before. On page 115, are entries which were made by me.

Mr. Hood: Objected to as irrelevant and immaterial.

Mr. Hood:

R. X Q. 98. The entry of June 8, to which you referred to on page 77 of the book, about which you have testified, is not associated with any year date, is it?

A. Dated at the top of the page, 1907, which refers to the first entry of each one of these.

R. X Q. 99. There is at least one entry on this page dated Jan. 9, 1909, is there not?

A. Yes. At the bottom of the page there is an entry of January 9, 1909, for extra contracts for Powers and Boyd, sheet metal contractors.

A blue-print of this tracing is marked for identification. Defendant's Exhibit 33, Blue-Print of the American Theater Building.

Mr. Hood: Blue-print is objected to as wholly irrelevant and immaterial and an unnecessary incumbrance of the record.

Deposition closed.
Signature waived.

F. C. BONSACK, another witness called on behalf of the defendants, being first duly sworn, testified as follows:

Direct examination by Mr. Jones:

Q. 1. State your name, age, residence and occupation.

A. F. C. Bonsack; architect; 27 years of age; 609 Laclede Gas Light Building, St. Louis, Missouri.

Q. 2. Are you a son of F. C. Bonsack, deceased?

A. I am.

Q. 3. Who was the architect for the American Theater Building of St. Louis, Missouri?

A. My father, F. C. Bonsack.

[fol. 371] Q. 4. Were you associated with him at the time?

A. Not at that time, no.

Q. 5. Can you produce any records relating to this building?

A. I can. I have here a roll of the tracings from which the building was built and a contract book in which are entered the names of the contractors and the amounts of their contracts.

Mr. Hood: Objected to as incompetent.

Q. 6. Is blue-print, Exhibit 33, made from one of these tracings you have referred to?

Mr. Hood: Objected to as incompetent.

A. Yes.

Q. 7. Where did you find these records?

Mr. Hood: Objected to as incompetent.

A. I found them in the files of my father, which I now have. All records of work done in the last thirty-five years are in those files.

Q. 8. Have you been able to find any photographs showing the concrete distributing apparatus used on the American Theater Building?

A. We had some, but unable to find them, they were lost at the time, when I went into the Navy. I moved from the office, the office which father had, and moved out of there every old photograph and miscellaneous records which were not valuable to me. There were two large boxes and those boxes were sent to a warehouse which my uncle rented at that time on Biddle Street. While I was in the Navy he moved his warehouse to 921 Biddle Street, and broke those boxes, and a great many of those pictures and records were lost. I was unable to find in my records the pictures that were taken during the construction of the American Hotel and Theater.

Q. 9. Do you know Samuel C. Black, who just testified?

A. I do.

[fol. 372] Q. 10. Did you see the American Theater Building during the erection?

A. I did.

Q. 11. Explain the meaning of the record on pages 76 and 77 of the contract book you have produced and which Mr. Black referred to.

Mr. Hood: Objected to as incompetent.

A. This is a contract book kept as an office record, in which we enter the contracts on every job and pages 76 and 77 is the American Theater building, northeast corner of Seventh and Market Streets for the Southern Real Estate and Financial Company. We find on those two pages, the names of the contractors who did the work and the amounts of the contracts and the dates of the contracts.

Q. 12. According to the office practice, what did these dates indicate?

Mr. Hood: That is objected to as incompetent. This witness is testifying that he was not connected with the business of his father at the time of the inquiry, and so far as the record shows, it is wholly incompetent, he has no knowledge of the matter inquired about.

A. These are the dates the contracts were signed for the various parts of the work.

Q. 13. About how many sub-contractors appear on these pages?

Mr. Hood: Objected to as incompetent and not the best evidence.

A. Twelve or fourteen.

Q. 14. In whose handwriting were the entries made?

A. Couldn't say.

Q. 15. Are you willing to let that book out of your possession?

[fol. 373] A. I am not; it is an office record; can't let it go. I have got current jobs in here.

Q. 16. Did you ever visit your father's office during 1907?

A. Yes, I went there quite often.

Q. 17. What is your personal recollection of the year when the building was built, aside from the records?

A. Aside from the records, I used to go once in a while over to the building to watch the construction work, to see what was going on. I was in school at the time.

Q. 18. Any recollection of what year it was?

A. I know that the American Theater Building was started in that year, at that time, I know what other jobs I had, as far as that goes.

Cross-examination by Mr. Hood:

X Q. 19. You had nothing to do with the making of anything of the entries on pages 76 and 77 of the book, contract record book about which you testified?

A. No.

X Q. 20. You didn't see any of the entries made?

A. No.

Redirect examination by Mr. Jones:

R. D. Q. 21. Do you know where the plates are from which the photographs were made?

A. A commercial photographer by the name of Hampson, he took the pictures as the work progressed. The pictures that were taken during the erection of the building he has no record of. Probably considered them immaterial after the building was finished. Probably destroyed. He told me yesterday, he didn't have them anymore.

Mr. Hood: Statements of witness relating to what was sold by the commercial photographer is objected to as hearsay.

Signature waived.

[fol. 374]

St. Louis, Mo., Feb. 12, 1921—10 a. m.

Present: Same as before.

HERMAN A. BANKES, another witness called on behalf of the defendants, being first duly sworn, testified as follows:

Direct examination by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Herman A. Bankes; 56, the 29th day of August, 1920; Bremen Avenue; running a confectionery store, at the present time.

Q. 2. Were you subpoenaed to testify in this case?

A. Yes, sir.

Q. 3. Did you decline to respond to the first subpoena served on you several days ago by a notary public?

A. I considered it was no subpoena to make me come to court.

Q. 4. You were then subpoenaed again later by the U. S. Marshal?

A. Yes, sir.

Q. 5. This suit is based on the Callahan patent No. 948,719, relating to the distribution of concrete by means of tower and chutes. Have you ever testified before in a suit relating to this general subject-matter?

A. Yes, sir.

Q. 6. Can you tell us about when that was and who the parties were?

A. There was Insley, I believe that was his suit, I am not sure.

Q. 7. About how long ago?

A. Well, I should think four or five years ago, I couldn't tell exactly, neighborhood of that.

Q. 8. Are you the same Herman A. Bankes who was called as a [fol. 375] witness about the winter of 1914-15 in a suit pending in the Canadian court in which you testified as follows (reading):

"**HERMAN A. BANKES**, a witness produced on behalf of the defendants other than Musselsens, Limited, having been first duly sworn on the Holy Evangelists, in accordance with his religion, by the said Commissioner, deposes and says, in answer to questions, as follows:

"(Objections omitted.)

"Q. I. What is your name, age, residence and occupation?

"A. Herman A. Bankes; age, 49 years last birthday; residence, No. 8200 Church Road, St. Louis, Missouri, U. S. A.; occupation, superintendent of re-enforced concrete work.

"Q. II. For what company do you work, Mr. Bankes?

"A. Now, at the present time, for the McCormick Coons Construction Company of St. Louis.

"Q. III. For whom did you work before then?

"A. Gilsonite Construction Company.

"Q. IV. Between what years did you work for the Gilsonite Construction Company?

"A. Between 1897 and 1908.

"Q. V. Do you know of a reservoir near St. Louis commonly called 'Baden Reservoir'?

"A. Yes, sir.

"Q. VI. Who built it?

"A. Gilsonite Construction Company.

"Q. VII. Did you have anything to do with the building of it?

"A. I superintended the construction of it.

"Q. VIII. Please state how you had the concrete placed during the building of this reservoir.

"A. Some of it was wheeled; some of it was carried to places in little cars, and some of it was carried and placed through chutes.

"Q. IX. How long were these chutes?

"A. The longest was two hundred and forty (240) feet.

"Q. X. About what year was this reservoir built?

"A. I think it was in 1905 and 1906.

[fol. 376] "Q. XI. Do you know of a building here in St. Louis called the Ely-Walker Warehouse?

"A. Yes, sir.

"Q. XII. Who built it?

"A. Gilsonite Construction Company done the concrete work; James Stewart was the general contractor.

"Q. XIII. What, if anything, did you have to do with its construction?

"A. I superintended the concrete work for the Gilsonite Construction Company.

"Q. XIV. How was the concrete placed in the construction of this building?

"A. With wheelbarrows.

"Q. XV. Explain in detail, how the concrete was gotten to the wheelbarrows.

"A. We had a system of bins built on the Sixth Street side; about six feet from the basement floor was the bottom of them. We drive

the team over the top of the bins, dump the material in the bins, and from the bins into little cars. I mean by little, twenty-two to twenty-five cubic feet. An endless chain would catch the axle of the car, take it up an incline to the top of the mixer, then dump the car in the mixer, dump from the mixer into a skip or bucket; 'skip' it is usually called; hoist the skip to the floor and dump it into a receiving hopper and from there into wheelbarrows.

"Q. XVI. In what sort of a structure was this skip hoisted?

"(Objection omitted.)

"A. In a tower, or what I usually call a tower, four pieces, one on each corner, stay lathed and sway braced.

"Q. XVII. During the construction of this Ely-Walker Building, did you remain satisfied with this method of placing the concrete?

"A. No, sir.

"Q. XVIII. What changes, if any, did you wish to make?

"A. I wished to use chutes when it was about half-way up, about the fourth floor, or along about there.

"Q. XIX. Please explain more in detail how you wished to use these chutes.

[fol. 377] "A. Well, in the first place, it took twenty-five (25) men to take the material away as fast as we could mix it, and we had only six men below putting it into the mixer, and we thought the chutes would do away with a lot of labor and cut down expenses. I drew up a plan to hang a boom and chutes on the tower, submitted it to the company, and they didn't want to spend the money on that job, as it was over half done. So I left it drop there.

"(Objections omitted.)

"Q. XX. How did you propose to get the concrete from the hopper at the top of the tower into the chute?

"(Objections omitted.)

"A. From the bottom of the hopper on top of the tower which the skip dumps into.

"Q. XXI. You have stated you wanted to mount a boom on the tower and support chutes from it—

"(Interruption by the witness.)

"A. So as to swing around.

"Q. XXII. When was this Ely-Walker building built?

"A. In 1907.

"Q. XXIII. Do you know a building here in St. Louis known as the American Theater and Hotel Building?

"A. Yes, sir.

"Q. XXIV. Who built it?

"A. Gilsonite Construction Company did the concrete work. The other work was let to different contractors. Hartman Brothers did the brick work, and other work was sub-let.

"Q. XXV. What, if anything did you have to do with it?

"A. I superintended the re-enforced concrete work.

"Q. XXVI. Please explain how the concrete was placed in the construction of this building.

"A. We had bins on the Market Street side, we drove wagons over and dumped them in the bins, out of the bins into little cars, an endless chain catched them by the axle, take them to the top of mixer and dumped it into mixer out of the mixer into a skip, and hoist the skip up and dump into receiving hopper, and out of receiving hopper pass through chutes to spouts; 'spouts' we called them because they were inclosed.

"Q. XXVII. In what sort of a structure did this skip travel?

"A. In a tower.

"Q. XVIII. On what was the hopper supported?

"A. On the tower.

"Q. XXIX. When was this American Theater and Hotel Building constructed?

"A. In 1907.

"Q. XXX. I now call your attention to two photographs, which have been marked 'A' and 'B'; to whom do these belong?

"A. They belong to me.

"(Objections omitted.)

"Q. XXXI. What do these two photographs show?

"A. They were taken principally to show the spouts distributing the concrete at the time.

"Q. XXXII. What spouts, and what concrete, and where?

"A. On the American Theater and Hotel Building job.

"(Objections omitted.)

"Q. XXXIII. Are you willing to part with these photographs?

"A. No, I am not.

"Q. XXXIV. Will you please state on the record why?

"A. Because I have about one hundred and fifty (150) photographs and I keep them from every job and I sometime will have a little den of my own and I might want to hang them on the wall to show what I have done in my younger days, when I am smoking good cigars.

"(Objections omitted.)

"Q. XXXIV. Do you know of a building here in St. Louis called the 'Coliseum'?

"A. Yes, sir.

"Q. XXXV. Please state, if you can, when this was built?

"A. In 1908, I am pretty sure.

"(Objections omitted.)

"Cross-examination declined.

"Deposition closed."

[fol. 379] A. Yes.

Q. 9. Are the facts, as stated in this prior deposition, correct to the best of your knowledge and belief?

A. Yes, sir.

Q. 10. Have you the Photographs A and B referred to in this prior deposition?

A. Yes, sir.

Q. 11. Will you please produce them?

(Witness produces photographs.)

These photographs are marked for identification Defendants' Exhibit 2.

It is stipulated that photographic reproductions may be used in place of the originals, and that Exhibit 2 constitutes a correct reproduction of said photographs.

Q. 12. Do you wish to keep these photographs?

A. Yes, sir.

Q. 13. Are these photographs marked in pencil, A and B, in the upper left-hand corners, the identical two you produced during the Canadian depositions?

A. Yes, same two, yes, sir.

Q. 14. Where have they been since that time?

A. In my possession.

Q. 15. You state in your prior deposition you were forty-nine years old, at that time, that would have been about six years ago?

A. Must have been along about that length of time, I couldn't tell exactly, long about that time.

Q. 16. Was this Canadian suit the one you previously referred to in which you testified as a witness on behalf of Insley?

A. In that deposition, yes, sir, that was for Insley.

Q. 17. Please refer to the photograph constituting the upper half of sheet 2 of Exhibit 2 and state where that picture was taken.

[fol. 380] A. Baden Reservoir, St. Louis, Missouri.

Q. 18. Do you appear in the picture?

A. Yes, sir, right here.

Q. 19. Where did you get the lower photograph on that sheet showing a tower and dome in the background?

A. Was sent to me from St. Joseph, Missouri.

Q. 20. About when—do you remember?

A. Well, it was about the year after we were on the American Theater.

Q. 21. Where has that photograph been in the meantime?

A. In my possession.

Mr. Hood: The photograph just referred to, if offered in evidence, is objected to on the ground that it has not been properly identified.

Q. 22. You remember who sent it to you?

A. A fellow by the name of Bill Bess.

Mr. Hood: Further objected to, photograph is further objected to on the ground that the present evidence relating thereto is not the best evidence.

Q. 23. Where was Bess at the time?

A. St. Joseph, Missouri.

Q. 24. Are you the same Herman A. Banks who refused to sign an affidavit at my request last summer in connection with the preliminary injunction motion in this suit?

A. Yes, sir.

Q. 25. But you produced the four photographs at that time which you have just produced today?

A. Yes, sir.

Q. 26. Did you ever know S. C. Black, J. W. Goebel, F. M. Woodward or H. O. Webb?

A. I know Mr. Goebel; can't place Black.

Q. 27. Did you know any of these parties in connection with the American Theater Building?

[fol. 381] A. Was he the superintendent?

Q. 28. I am asking if you knew any of these parties in connection with the Ely-Walker Building or American Theater Building?

A. I knew of Black, that was connected with the American Theater Building, who was superintendent for the architect, I couldn't tell you his initial, I remember his name was Black.

Q. 29. In Photograph A of the American Theater Building, Exhibit 2, the tower appears to be braced by two diagonal braces?

A. Yes, I guess it was.

Q. 30. What part of the building were those braces used on?

A. Top floor, on the roof.

Q. 31. Used also on the lower floor?

A. No, sir.

Q. 32. On the lower floor, on what was the hopper supported?

A. I-beams, planks laid across, with braces laid across and the hopper hung from it.

Q. 33. What was the relation of the hopper to the tower on these lower floors?

A. To dump concrete into.

Q. 34. Was it fastened to the tower in any way?

A. Not on the lower floors, no, sir.

Q. 35. Where was it fastened to the tower?

A. I don't understand your question. Take a two by eight and nail it to the tower and let it stick out about six feet, then put an angle brace down to support the outer end. Then laid the tower between these two planks,—the hopper between these two planks on the roof only.

Q. 36. You testified for Insley in the Canadian suit that the hopper was supported on the tower?

[fol. 382] A. That is just what I said now.

Mr. Hood: Objected to unless the exact words referred to by counsel be read to the witness.

Q. 37. The question I referred to was 27: "In what sort of structure did this skip travel? A. In a tower. Q. (28). On what was the hopper supported? A. On the tower." Was that statement true also with reference to the floors below the roof?

A. No, sir, different, constructed different.

Q. 37a. Would you kindly explain a little more in detail how the hopper was supported on these lower floors with reference to the tower?

A. Lay a brace on one bay crosswise and let the hopper drop down in those, between those planks which would hold it.

Q. 38. Was the hopper fastened to the tower in any way?

A. No, sir.

Q. 39. But it was alongside of the tower?

A. Yes, sir.

Q. 40. Was the tower outside of the building or inside of the building?

A. Inside of the building.

Q. 41. In some kind of a shaft or opening?

A. Yes, sir.

Q. 42. How were the—explain a little more in detail how the chutes were, how the pipes were supported?

A. Hung to these I-beams, from one I-beam to the other.

Q. 43. And what proportion of the floor area could you reach with them?

A. Any part of the building.

Q. 44. How did you manage to reach first one side and then the other side of the building?

A. I had a swivel joint, turn either way, and then by spouts, [fol. 383] run a main line from one end of the building, then distribute from there around.

Q. 45. On the Baden Reservoir, explain a little more fully how the chutes were supported.

A. On trestles.

Q. 46. Were those always in the same place or could they be moved?

A. Just put there for one place, not used any more.

Q. 47. I mean, could the point of delivery of the concrete be changed or was it always in the same place?

A. No, move the last length.

Q. 48. You moved all the chutes?

A. Only the short chute—sixteen feet.

Q. 49. What was that last length?

A. Used a sixteen-foot chute and swung it around.

Q. 50. So that the last length, you could always swing around?

A. One length all the time, we moved that to distribute the concrete, two feet thick, twenty-two feet wide, the concrete was.

Q. 51. You have stated in your previous deposition that "I drew up a plan to hang a boom and chutes on the tower"; did you ever show that plan to anyone?

A. Yes, sir.

Q. 52. You remember who?

A. Showed it to Walter Goebel.

Q. 53. You remember on what kind of paper that sketch was made?

A. Drafting paper, pencil sketch.

Q. 54. How was the boom shown in that sketch in relation to the tower?

A. It comes from the top of it, above the hopper, so that it hung to the top of the tower, cable, block on down there down to the chute, one length of chute.

Q. 55. You mean to indicate by that gesture an inclined boom?

[fol. 384] Mr. Hood: Object to that as leading.

A. Inclined boom.

Q. 56. Did you say that boom projected out from the tower?

A. On an angle, on a rise.

(Witness indicates with his hand upwardly inclined boom.)

Q. 57. You say then, the top of the boom was secured near the top of the tower in some way?

A. Yes, sir.

Q. 58. By what?

A. By block and tackle, supposed to be.

Q. 59. What was the purpose of that boom?

A. To hold that chute up, was going to run the concrete through.

Q. 60. In what direction was the boom movable?

A. Sideways, either way.

Q. 61. Mr. S. C. Black, who previously testified, referred to some arrangement of bins and cars on the American Theatre Building; can you describe this arrangement a little more fully?

A. Just the same as on the Ely-Walker Building, same apparatus was taken from the Ely-Walker.

Q. 62. Did you get up this arrangement?

A. Yes, sir.

Q. 63. Where is the Baden Reservoir?

A. Baden Reservoir?

Q. 64. Yes.

A. 8300 North Broadway, St. Louis, Missouri.

Q. 65. Near the river?

A. No, sir.

Q. 66. Near the Merchant's Bridge?

A. No, sir.

Q. 67. How far back from the river is it about?

A. I couldn't tell you that,—mile anyhow.

[fol. 385] Q. 68. I call your attention to Defendants' Exhibit 3 and ask if you can identify the structure shown therein?

A. You want me to describe it?

Q. 69. I just want to know if you can identify this structure.

A. Well, it looks like it might be the Coliseum of St. Louis.

Q. 70. Did you see the Coliseum as it was being erected?

A. Just once.

Q. 71. About how much of the concrete work on the American Theater Building was built by the use of your pipe distributing apparatus?

A. All of it.

Q. 72. Do you recall who the attorney was representing Insley at the time of this Canadian deposition?

A. No, sir.

Q. 73. Was it Mr. Schley?

A. Couldn't tell you.

Q. 74. In addition to Goebel, did you tell anyone that you were the inventor of this scheme proposed for the Ely-Walker Building?

A. I showed it to the carpenter—carpenter foreman that was on the job.

Q. 75. Did you tell anyone on the American Theater Building that you were the inventor of the spouting system used there?

A. Why, not particularly, that I know of.

Q. 76. You mean you may have told someone, but don't recall whether you did or not?

Mr. Hood: Objected to as entirely an assumption.

A. No.

Q. 77. Why didn't you apply for a patent on this apparatus? [fol. 386] A. Well, I didn't have the money to start with. At the time I didn't think it could be patented. Hard time getting money to put the chutes up.

Q. 78. As a matter of fact, did the device operate successfully as far as the concrete was concerned?

A. Yes, sir.

Q. 79. In all other respects?

A. Yes, sir.

Q. 80. As I understand your previous answer, in the sketch you made of the Ely-Walker Building, you showed the tower with a boom having its lower end swinging on the tower in some way and extending upwardly at an angle, with its upper end fastened by a block and tackle secured to the tower, and a chute hung from the boom; is that correct?

Mr. Hood: The question is objected to as grossly leading and putting words into the mouth of the witness. It is also objected to as wholly immaterial. The testimony speaks for itself.

A. Yes, sir.

Q. 81. Have you still the sketch that you showed Mr. Goebel?

A. No, sir.

Cross-examination by Mr. Hood:

X Q. 82. The swivel joint to which you have referred in your testimony relative to the apparatus which was used on the American Theater Building is the swivel joint that is supported by a square frame work at about the middle of the photograph "B" of Defendants' Exhibit 2, is it not?

A. Yes, sir, that is it.

X Q. 83. The attention of the witness is particularly called to the square frame work at approximately the exact middle of the photograph [fol 387] "B." That swivel joint was supported by the square

frame work which in turn was supported on the steel frame of the structure; is that right?

A. On the roof only.

X Q. 84. Then you didn't use the swivel joint on the lower floors?

A. Yes, sir.

X Q. 85. How was the swivel joint supported on the lower floors—by a trestle?

A. Laid planks across the I-beams, and let this other hopper dump into that, around from underneath *this* planks. (Witness makes a swinging motion.) These planks laid across the I-beams.

X-Q. 86. At the time you were working on the Ely-Walker Building, what salary did you get?

A. \$150 a month, I am not sure, I think it was.

X Q. 87. When was that?

A. Well, I couldn't tell the exact date.

X Q. 88. What year was it?

A. I think it was in 1907, I couldn't tell you for sure, the only way I could make sure, to look at the date on the photograph, on the Ely-Walker photographs, which was dated by the man that took the photographs.

X Q. 89. What was your salary while you were at work on the American Theater and Hotel Building?

A. Same salary, wasn't changed.

X Q. 90. You have a pretty accurate recollection of what the exact structure of the apparatus was which you used on the American Theater Building foundation?

A. Yes, sir.

X Q. 91. You think you would be more likely to remember the precise details than anybody else, in view of the fact that you built it?

A. I think I would, yes, sir. I worked hard enough on it, ought to remember.

[fol. 388] X Q. 92. You didn't put up the chutes which you used on the American Theater Building at your own expense, did you?

A. No, sir.

X Q. 93. Did you ever see the actual apparatus which is illustrated in the lower photograph of sheet 2 of Defendants' Exhibit 2?

A. No, sir. You mean on the job?

X Q. 94. Yes.

A. No, sir.

X Q. 95. Then you don't know anything about this photograph except that it was sent to you by the man you named?

A. No, sir.

Deposition closed.

Signature waived.

The Notary: Mr. Bankes asking leave to make a further statement, the following statement was made:

Mr. Bankes: I felt I was entitled to a little money for my photographs, as I kept them all these years, and when Mr. Jones last

summer said that he couldn't very well give me very much, he would give me twenty-five dollars, I told him that I wouldn't consider it in any shape or form, and for him and the notary public to get out of my house.

JAMES L. HOPKINS, another witness called on behalf of the defendants, being first duly sworn, deposes and testifies as follows:

Direct examination by Mr. Jones:

Q. 1. State your name, residence, and occupation.

A. James Love Hopkins; residence, St. Louis, Missouri; occupation, attorney-at-law; lawful age.

Q. 2. I call your attention to patent No. 948,746, issued February [fol. 389] 8, 1910, to Arthur L. Smith, and Concrete Appliance Company on an application filed February 23, 1909, and ask if you know the attorneys for said patentee, Hopkins and Eicks, whose names appear thereon.

A. I was the senior member of that firm, composed of myself and Alfred A. Eicks, February 8, 1910.

Q. 3. You recall an interference, No. 30,533, which arose during the prosecution of that application?

A. I couldn't recall the number of that, I know that this application was in interference, a three-party interference.

Q. 4. I call your attention certified copy of a Patent Office record entitled interference No. 30,533, Callahan v. Emtman v. Smith, and will ask you if you are the James L. Hopkins who made the affidavit appearing therein?

Mr. Hood: Objected to as irrelevant and immaterial.

A. That is my signature; apparently this is a copy of an affidavit which I made in the interference you refer to.

Q. 5. Just give the date of the affidavit.

A. The affidavit being dated August 30, 1909.

Q. 6. I call your attention to what purports to be a copy of the preliminary statement of Arthur L. Smith, executed July 28, 1909, and will ask if you know who prepared that preliminary statement?

Mr. Hood: Objected to as irrelevant and immaterial.

A. I prepared the preliminary statement of Arthur L. Smith in that interference. As to whether this is a true copy of that preliminary statement, I couldn't say. At this time as far as I know, I think this is a correct copy, I couldn't identify it, to be exact.

[fol. 390] This preliminary statement and the certified copy previously referred to are marked for identification Defendants' Exhibit 36, Copies of Preliminary Statements.

Mr. Hood: The defendant is notified that any offer of this exhibit in evidence will be objected to as irrelevant and immaterial, and not properly pleaded.

Q. 8. Will you kindly state your recollection of the circumstances attending the declaration and prosecution of this interference?

Mr. Hood: The question is objected to as irrelevant and immaterial. Further object to the examination of this witness relative to the subject-matter inquired about, on the ground that it is a privileged communication so far as the party Smith is concerned and there is no showing of any waiver of that privilege so far as Smith is concerned. It is clearly improper to examine this witness at this time under the record as it now stands, purely and solely on the ground of privilege, the witness having testified that he was an attorney for Smith in the matter inquired about.

A. Prior to the issuance of this Smith patent referred to I was one of the parties interested in the organization of the Concrete Application Company of Missouri and was a stockholder therein and was attorney for that corporation in its organization. The privilege matter can be based upon that as well as the witness's relation with Arthur L. Smith. It is only proper to state that in the record.

Mr. Hood: In view of the statement just placed on record, examination of the witness relative to the subject-matter inquired about [fol. 391] is further objected to on the ground that it is a privileged communication so far as one of the plaintiffs in this case is concerned, and that the record doesn't show that there has been any waiver or that privilege.

Q. 9. Read the question, please.

(Witness handed paper. Question read.)

Mr. Hood: I object to witness being handed uncertified copies of papers.

A. I have only a general recollection of the circumstances. The matter of the declaration of the interference is a matter of record. I don't recall that any action was taken. The interference was disposed of by settlement between the parties in which I represented Mr. Smith and the other two parties were represented by the then firm of Townsend, Lyon and Hackley, and Mr. Sheehy of Washington. Does that cover your question?

Q. 10. The records show that this interference was terminated by concession of priority from Emtman and Callahan to Smith. Do you recall whether this concession was made with or without a consideration of the probable evidence to be introduced?

Mr. Hood: Objected to. The question is not justified by the record as it now stands. It is understood and agreed that the objections previously entered to this line of examination may stand without repetition.

A. The concession of priority was entered into after a conference between counsel for the respective parties.

Mr. Hood: Objected to as wholly irrelevant and immaterial and incompetent. The conclusions which may have been reached by the witness or other parties can have no possible bearing in this case which must be decided by the court on the evidence showing facts upon which proper conclusions may be raised. Certain conclusions [fol. 392] of this witness cannot be binding in the present case.

Q. 11. Were you subpoenaed to testify as a witness in this case?

A. Yes, sir, by you.

Q. 12. Prior to the conference with the other attorneys you have just referred to, did you make any investigation of the prior activities of Arthur L. Smith with respect to his alleged invention?

A. I visited Norfolk, Virginia, at his request and under his instructions, for that purpose.

Q. 13. What did you do in Norfolk?

A. I interviewed a number of witnesses in relation to the structures referred to in his preliminary statement.

Q. 14. Did this investigation of yours, in any way, confirm the facts previously set out in the Smith preliminary statement?

Mr. Hood: Objected to as irrelevant, immaterial and incompetent, and calling for a statement of conclusion.

A. So long a time has elapsed, I have only a general impression that my investigations were with the result of corroborating his preliminary statement.

Q. 15. In your conferences with the attorneys for Emtman and Callahan, do you recall whether you informed them regarding the result of your investigation in Norfolk?

Mr. Hood: Objected to as irrelevant and immaterial.

A. We had the usual discussion of facts. I do not doubt that I referred to my visit to Norfolk but I could not recall positively that I mentioned my visit. Of course, the localities were given in our preliminary statement and the facts could be developed by them as readily as by myself.

[fol. 393] Q. 16. Do you recall the names of any of the parties you may have interviewed at Norfolk?

A. I do not.

Q. 17. Do you recall interviewing a number of parties?

A. There were several.

Q. 18. Was your inquiry directed to the buildings referred to in the Smith preliminary statement, the Lynnhaven Hotel and the Vinery Building?

A. They were directed to two buildings and those seem to be the names. I recall that the architect of one of those buildings was not available as his office was in Richmond, Virginia, and that I saw somebody in the offices of the architect of the other building who was in Norfolk, a Norfolk architect with his office there.

Q. 19. Do you recall ever having any conference at Washington with Arthur L. Smith about this period?

A. I recall having had at least two conferences with him in Washington. He had an office in a building which I think was called the Blackstone Building. The dates of those conferences I couldn't fix now. It might have been either before or after my visit to Norfolk.

Q. 20. The preliminary statement mentioned the St. Louis Coliseum. Have you any personal knowledge of the relation of the Smith patent to the erection of that building?

A. I recall distinctly that before he came to me with his application for a patent, there was nothing left of his structure in the Coliseum. The work had been completed and the draftsman got his data from material which Mr. Smith gave him.

Q. 21. You understood then, did you, that there was some connection between the Coliseum job and Mr. Smith's application at that time?

Mr. Hood: Objected to as incompetent. The understanding of [fol. 394] this witness of the matter inquired about has nothing to do with the issues in this case.

A. I knew nothing about it except what Mr. Smith told me.

Q. 22. Did he mention the Coliseum in that connection?

A. Yes, sir.

Mr. Hood: Objected to as hearsay.

A. He said that he used an apparatus at the Coliseum, of which he produced the original data as the basis for his application for patent.

Mr. Hood: Counsel for plaintiff moves to strike the entire deposition from the record for the reasons set forth in the various objections of the record.

Signature waived.

St. Louis, Missouri,
Saturday, Feb. 12, 1921—2:30 p. m.

Present: Same as before.

JOHN WALTER GOEBEL, another witness called on behalf of the defendants, being first duly sworn, testified as follows:

Q. 1. Please state your name, age, residence and occupation.

A. John W. Goebel; 47 years of age; 3527-A Connecticut Street, St. Louis; contractor; president of the J. W. Goebel Contracting Company, 4242 Clayton Avenue, St. Louis.

Q. 2. Have you ever testified in a suit involving distribution of concrete through chutes in a tower?

A. Yes, sir.

Q. 3. About how long ago was that?

A. Five or six years ago.

[fol. 395] Q. 4. Is that suit the one which is identified as Concrete Appliance Company v. Rourke, 3287, 1913, a copy of a deposition in which case I call to your attention?

Mr. Hood: The question is objected to as incompetent on the ground that the copy shown the witness is not the original.

A. Yes.

Mr. Jones: Mr. Hood is asked to produce the original deposition and that of Herman A. Banks at the hearing.

Q. 5. Does this copy which I have shown you correspond, as far as you can recollect, with your testimony at that time?

Mr. Hood: Objected to as incompetent and immaterial.

A. Yes.

Mr. Jones: This copy is submitted to Mr. Hood for his inspection.

Q. 6. Mr. Jones: Do you know Herman A. Banks?

A. Yes, sir.

Q. 7. How recently have you seen him?

A. I think it has been six or seven years.

Q. 8. Have you been told of or read any testimony which he may have given in this present case in the last few days?

A. No.

Q. 9. In your work do you employ chutes for distributing concrete?

A. Yes.

Q. 10. When did you first see such chutes used?

A. On the American Theater Building, corner of Seventh and Market Streets, St. Louis.

Q. 11. Please describe in more detail that apparatus.

A. It was an outfit consisting of mixing machine in the basement, [fol. 396] a tower, and skip or bucket by means of which the concrete was hoisted to the top of this tower and dumped into a hopper and from this hopper conveyed into the position by means of chutes which were suspended from a wire cable or hung by derrick or swung to I-beams as the case may be. In this particular case the chutes were suspended from the I-beams of the building since this type of building was what we term a steel skeleton structure.

Q. 12. Who got up this apparatus?

A. The apparatus at the American Theater Building was gotten up by Mr. Banks, who was then foreman for the Gilsonite Construction Company, by whom I was at that time employed.

Q. 13. State whether you know of a structure near St. Louis known as the Baden Reservoir.

A. Yes, that was constructed by the Gilsonite Construction Company, in 1903, I think.

Q. 14. Did this structure involve any concrete?

A. It was built entirely of concrete.

Q. 15. How was the concrete deposited?

A. A good deal of it was deposited by means of wheelbarrows, concrete being dumped from a mixing machine directly into the wheelbarrow and then wheeled into position and a good deal of it was deposited by means of wooden chutes.

Q. 16. How were the chutes supported and what was their relation to the mixer?

A. The basin was in the ground, the mixing machine was on the bank alongside of it. These chutes run from the mixing machine to the wall or bottom as the case may be, and were supported by wooden trestles; sometimes the chutes rested on a part of the finished wall.

Q. 17. Did the trestles always remain in the same position?

[fol. 397] A. Not necessarily; they were moved from time to time.

Q. 18. Did the chutes always deposit concrete in the same place?

A. They were moved as the work required.

Q. 19. Explain a little more fully how they were moved.

A. Well, just two or three men picked them up and carried them in position and then placed them on the trestles.

Q. 20. That is both the trestles and the chutes were moved to meet conditions; is that correct?

A. That is correct.

Q. 21. Do you recall about how far the chute ran from the mixer?

A. No, that would vary, sometimes the mixing machine would be close to the wall and sometimes would be fifteen or twenty feet away.

Q. 22. What was the relation of the individual chutes with relation to each other?

A. I don't understand the question, "their relation to each other."

Q. 23. You have stated that the chutes ran from the mixing machine to the bottom of the reservoir; I want to know how these chutes were connected to provide a continuous run?

A. I am not familiar with the details of that particular job to answer that question.

Q. 24. What was the relation of each chute to its neighbor? I mean by that, were they adjacent or remote or connected in any way?

A. Sometimes the ends of those chutes were flared or, in other words, made larger on one end, so that one chute would fit inside of the other; sometimes one chute was just resting on the top of the other.

[fol. 398] Q. 25. Did you have any connection with the building of the Ely-Walker Warehouse of St. Louis?

A. I was assistant manager for the Gilsonite Construction Company, who had the contract for the reinforced concrete work on the warehouse building for the Ely-Walker Dry Goods Company built on the corner of Seventeenth and Locust Streets.

Q. 26. What was the difference between the chuting arrangement on the Baden Reservoir and that on the American Theatre Building?

A. The chuting arrangement on the American Theater Building,

the chutes were made of sheet iron, whereas, on the Baden Reservoir, my recollection is they were simply wood chutes.

Q. 27. Was there any other difference in the manner of transferring the concrete from the mixer to its final destination?

A. Yes, the concrete had to be hoisted at the American Theatre Building.

Q. 28. Please read your answer to Q. 9 and 10 and state if you intended to exclude the Baden Reservoir in that answer.

A. No, sir. I answered it that way because I had in mind building construction, whereas the Baden Reservoir was simply a hole in the ground.

Q. 29. How was the concrete distributed on the Ely-Walker Building?

A. Wheelbarrows.

Q. 30. How did it get from the mixer to the wheelbarrows?

A. The concrete was mixed in the basement by a machine and dumped from this machine into a skip or hopper and then elevated to the floor on which it was being used and then dumped from this skip or bucket into a hopper and then from this hopper loaded into [fol. 399] wheelbarrows or we may have used two wheel wagons at the time, I can't recall that, and then conveyed into position.

Q. 31. Was there anything unusual about this apparatus?

A. No.

Q. 32. You mean that the similar apparatus had been used before?

A. Yes.

Q. 33. Who was the general superintendent on this work?

A. Mr. Victor Hugo Clark, and under him his assistant was H. A. Bankes.

Q. 34. Was there any discussion about placing the concrete in a different manner on this building?

A. Yes.

Q. 35. Explain what you refer to?

A. During the construction of the Ely-Walker Building, Bankes came into the office one day with a sketch showing a method by which he proposed to spout or chute the concrete into position instead of wheeling it. He proposed to do this by means of chutes suspended from a derrick which could be swung from side to side and raised or lowered as may be required.

Mr. Hood: The answer is objected to as relating to a matter not properly pleaded.

Mr. Jones:

Q. 36. Did you see the sketch?

A. Yes, Bankes showed it to me. It was made on a piece of yellow sketching paper.

Q. 37. Was it in ink or pencil?

A. Pencil is my recollection.

Mr. Hood: This entire line of examination is objected to as relating to matter not properly pleaded and it is agreed that this ob-

[fol. 400] jection may be considered as entered without repetition to all questions and answers relating to this subject-matter.

Mr. Jones:

Q. 38. Please make a sketch reproducing as well as you can recall it, the Bankes sketch?

(Witness makes sketch.)

Q. 39. You have stated in answer to Q. 35 that the derrick would be swung from side to side and raised or lowered. Please indicate on this sketch the arrangement by which this could be accomplished.

(Witness amplifies sketch by an explanatory note.)

Q. 40. On what was this derrick supported?

A. On the tower.

Q. 41. What kind of connection was proposed between the upper end of the chute and the hopper?

A. The details of that I don't recall; didn't know anything about it, just a general idea.

Q. 42. What was the general idea with reference to the connection between the chute and the hopper?

A. By general idea, I mean the general idea about the entire scheme, about the details of that connection I don't know.

Q. 43. You have stated that the derrick could be moved from side to side and that it supported the chutes; what became of the chutes during such swinging?

A. Swung with the derrick.

Q. 44. Was this apparatus of Bankes put in use on the Ely-Walker Building?

A. No.

Q. 45. Why not?

A. If I recall it, because the building was pretty well along and we didn't want to make any changes.

The sketch is marked for identification Defendants' Exhibit 37, Goebel Sketch.

[fol. 401] Mr. Hood: The sketch is objected to as relating to matters not properly pleaded.

Q. 46. What is your recollection as to the time when the concrete work was done on the Ely-Walker building?

A. Commenced in the spring of 1907 and finished about July.

Q. 47. I call your attention to a book entitled Some Stewart Structures, and will ask if you can identify the buildings referred to on pages 41 to 45 inclusive?

Mr. Hood is advised that this is the book produced during the Chicago depositions and which he requested to have available in St. Louis.

Mr. Hood: This book is objected to on the ground that it shows on its face that it was published subsequent to the date of applica-

tion upon which the patent at issue was issued; it has not been properly proven nor pleaded.

A. Yes, on pages 44 and 45 there are photographs of the warehouse building that the Gilsonite Construction Co. constructed—the reinforced concrete part of the structure.

Q. 48. Have you any independent recollection of the date of this work aside from the dates appearing on the several photographs, i. e., February 15/07, April 1/07, May 1/07, June 3/07, July 1/07, Aug. 1/07?

A. Yes, as I stated before, the work commenced in the spring of 1907 and finished about July.

Q. 49. According to your recollection, about when was the concrete work begun on the American Theatre Building?

A. That was started just about the time that the reinforced concrete work on Ely-Walker Building was completed, it would be about July, 1907.

Q. 50. I call your attention to Defendant's Exhibit 33, and will [fol. 402] ask if you can identify the structure shown in this blue-print.

Mr. Hood: Objected to as relating to an exhibit not properly proven and as irrelevant and immaterial and relating to a matter not properly pleaded.

A. From my recollection, it is the basement plan of the American Theatre Hotel Building, I don't know what you mean by identification.

Q. 51. I simply meant, do you recognize the building from the outline of it and the details shown?

A. Yes.

Q. 52. What is the meaning of the various names and dates written on different parts of this blue-print?

Mr. Hood: Objected to as incompetent. There is no showing that this witness was connected in any way with the architect's office or that he has any knowledge on the subject inquired about and to enable him to interpret.

A. It is usual with architects in making contracts to have the contractor sign the tracing and also in some cases each page of the specification.

Q. 53. What was the practice of the Gilsonite Construction Company in this respect?

A. We were generally called upon to do the same.

Q. 54. About when were the foundations for this building put in?

A. I don't know except that they were put in prior to the time that we commenced to put the floors in which would be prior to July, 1907.

Q. 55. Assuming that the date on this tracing May 10/07, indicates the date when the drawings were made would it have been possible to put in the foundations in advance of this drawing?

Mr. Hood: Objected to as assuming matters which have not been [fol. 403] proven and as calling for an incompetent conclusion.

A. Yes, because there may have been a foundation plan. This is the basement plan.

Q. 56. Referring to the prior practice of elevating concrete in the tower and distributing it from a hopper and wheelbarrows or carts, which you say was done in 1907 on the Ely-Walker Building, what was the location of the hopper on the tower in such cases as the building became higher?

Mr. Hood: Objected to as assuming. The witness has not testified that in the apparatus referred to the hopper was on the tower.

A. I don't quite understand it. The hopper was moved from floor to floor or raised on the tower.

Q. 57. On what was the hopper supported in such cases?

A. On the tower.

Q. 58. About how high was the tower on the Ely-Walker Building at its maximum?

A. The tower was built to begin with—the tower was started in the basement and built high enough above the first floor to allow the hopper to be installed so that a wheelbarrow or a cart, as the case may be, could get underneath it to allow the concrete to be dumped into it; to be dumped into the wheelbarrow or cart.

Q. 59. What was done after the first floor was finished?

A. The tower and hopper was raised consecutively and so on throughout the building.

Q. 60. On this particular building, how high was the tower when it reached its utmost height?

A. It must have been the height of the building plus whatever height was necessary to get above the roof to allow the hopper to be installed.

[fol. 404] Q. 61. About how many stories did this building have when finished?

A. About eight floors, if I remember correctly.

Q. 62. On the American Theatre Building, where was the hopper as the work progressed?

A. That was generally two or three floors or four floors above the floor when the concrete was being deposited.

Q. 63. I call your attention to Defendants' Exhibit 2, and will ask you if you recognize the structure in the first sheet of photographs A and B.

A. That looks like the tower to the concrete spouting apparatus, but there is nothing on there that I can identify it.

Q. 64. Did you have occasion to visit the roof of the American Theatre Building during erection?

A. Probabilities are that I was up there.

Q. 65. Do you know anything about the apparatus of the lower photograph of the second sheet of this Exhibit 2?

A. Tootle-Campbell Building, St. Joseph, Missouri, I think I have seen it before.

Q. 66. You recognize the building in the photographs Defendants' Exhibit 14?

A. That is the Tootle-Campbell, St. Joseph.

Q. 67. What concrete spouting apparatus are you referring to in answer to Q. 63?

A. None in particular, just a concrete spouting apparatus. It is possible that that might be on the roof of the American Theatre Building.

Mr. Hood: The conjecture of the witness is objected to as purely speculative.

Q. 68. Do you intend the court to imply from your previous answers to Q. 63 and Q. 67 that the photographs A and B look like the [fol. 405] tower and concrete spouting apparatus of the American Theatre Building, but that you are unable to identify them positively?

Mr. Hood: The question is objected to as grossly leading in view of the repeated testimony of this witness when photographs A and B were shown to him that these photographs show a concrete tower and chuting apparatus, but that he had no particular apparatus in mind in answering the question and that there was nothing in the photograph by which he could identify it. Counsel for plaintiff protests against the practice of counsel for defendant by putting words in the witness' mouth.

Mr. Jones: The witness' answer to Q. 63 was that "That looks like the tower."

A. Yes.

Q. 69. You previously testified, did you not, that you saw the tower and chutes used during the erection of this building?

A. Yes.

Q. 70. About how often did you visit the building?

A. Once a day.

Q. 71. Was there any comment or discussion by yourself or others regarding this apparatus?

A. Quite a number of people visited the building, while we were using these spouts for concrete, the builders, architects, material men and others interested in building industries.

Q. 72. And did you have any discussion with these men regarding the apparatus?

A. I think I can recall one case.

Q. 73. What was the discussion about?

Mr. Hood: Objected to as irrelevant, immaterial and incompetent.

[fol. 406] A. About it being an economical method of placing concrete, something that we thought was brand new that never had been used before.

Q. 74. Have you used apparatus of this general character since that day, 1907?

A. Yes.

Q. 75. To what extent in a general way?

A. We use it on all concrete structures.

Q. 76. How soon did you begin using it after 1907?

A. Used it on the Tootle-Campbell Building in 1908.

Q. 77. Did you personally see that building being built?

A. I visited the building about once a month.

Q. 78. During this period from 1907 to the present day, what are the various arrangements you have employed for supporting chutes in your work where a tower is involved?

A. Principally by cables that are fastened to the top of the tower, then swung down so as to reach the floor, the chutes are then suspended from this cable, by means of block and tackle. That is the only way that I have ever done it. Of course, in steel structures chutes are suspended from the steel beams in the building.

Q. 79. You mean you have never used chutes supported on top of the trestle?

A. Yes, we have used chutes supported on trestles.

Q. 80. Have you ever supported any part of the chutes to a boom?

A. No.

Q. 81. Why not?

A. Just never had the occasion to use it.

Q. 82. What occasion calls for a boom?

A. In a place where you couldn't very well anchor your cable to support the chutes.

Q. 83. In your sketch Exhibit 37, is there any other name that might be applied to the swinging derrick?

[fol. 407] A. Swivel derrick, you might call it.

Q. 84. What is the difference between a derrick and a boom, such as you have just been talking about?

A. Well, a derrick consists of what you would call a mast and a boom. The mast in this case would be the tower.

Q. 85. Referring to your sketch Exhibit 37, did Bankes propose any scheme to control the flow of concrete from the hopper to the chutes?

Mr. Hood: Objected to as leading in view of the previous testimony of the witness.

A. In every case where a hopper was used there was always a man stationed at the hopper to open and close the gate at its lower end which of course regulates the flow of the concrete.

Q. 86. How many contractors were employed on the American Theater Building, one or more?

A. There might have been a dozen.

Q. 87. Was the Tootle-Campbell Building a steel-frame building?

A. No, sir, it was a reinforced concrete structure.

Q. 88. Was a boom used on the American Theater Building?

A. No, not to my knowledge.

Q. 89. Why did not Bankes use a boom, after proposing the apparatus shown in your Exhibit 37 sketch?

A. It wasn't necessary on the American Theater Building.

Q. 90. Why not?

A. Because we had the steel beams to support these chutes with.

Q. 91. How much of the area of each floor on the American Theater Building could be reached by these chutes?

A. All of it.

[fol. 408] Q. 92. How was this possible?

A. The chutes were moved from time to time.

Q. 93. Did you see the St. Louis Coliseum being built?

A. Passed by there several times.

Q. 94. Do you recall the concrete apparatus used?

A. They had a tower and a mixing machine and spouting.

Q. 95. Was this before or after the American Theater Building?

A. After the American Theater Building.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 96. How many times did you see the sketch which you say Mr. Bankes made and showed to you during the progress of work on the Ely-Walker Building?

A. I saw it when he brought it in, he left it lay on my desk, laid there for quite a length of time, I guess it was referred to perhaps once or twice. I remember very distinctly he came in one day and asked for it.

X Q. 97. How long has it been since you saw that sketch the last time?

A. That would be 1907.

X Q. 98. And as I understand your testimony, you are not sure of the details of the construction shown by this sketch, but merely recall the general scheme, is that right?

A. Yes, that is right.

X Q. 99. When you testified in the case of Concrete Appliances Company against Rourke, some of the questions asked you and the answers which you gave were as follows:

"Q. 19. In this scheme which Mr. Bankes wished to try on the Ely-Walker job, and of which he made a sketch, how was the boom of which you spoke, to be supported?"

[fol. 409] "A. I don't know anything about that. I did not go into details with him of how he intended to support the boom at all."

"Q. 20. Do you know on what he intended to support it?"

"A. The boom was to be supported on top of the tower as I said before, and was to be swiveled so that it could be moved from one side of the building to the other. The tower was to be guyed."

Is it your recollection that the portions which I have quoted were a part of your deposition in that case?

A. Yes

X Q. 100. And the answers which I have quoted were true at that time and are true at the present time?

A. Yes.

X Q. 101. You were shown a certain blue-print marked Exhibit 33, if that blue-print had had no title upon it, such for instance the title "Theatre and Hotel Building for the Southern Real Estate and Financial Company, etc.,," do you think you would have been able to state what particular building was illustrated?

A. Not at this time, no.

X Q. 102. Except for the title, you would not have been able to tell that this particular blue-print related to the American Theatre and Hotel Building job?

A. No.

X Q. 103. I understand you to say, or perhaps one of your answers might be construed to say, that on the American Theatre Building job, the chutes were sometimes suspended from a wire cable, extending from the tower, and sometimes hung by a derrick. Now, as a matter of fact, there was no time during the American Theater job that the chutes were supported or hung either from a wire cable or from the derrick?

A. I didn't say that, but I did say that they were suspended from the I-beams perhaps by a wire cable.

X Q. 104. Then it is a fact, is it not, that on the American Theatre [fol. 410] job, the chutes were never suspended from a derrick or boom carried by the tower, and were never suspended from a cable which itself was attached to a high point on the tower and was anchored to some suitable anchor?

A. Yes, it is a fact.

X Q. 105. You never saw any apparatus for chuting concrete comprising a tower and hoisting mechanism and a hopper associated with a tower and a chute arranged to receive the concrete from the hopper until you saw the apparatus which was put into use at the American Theatre Building, is that right?

A. I never saw an apparatus of that character until that time.

X Q. 106. How long prior to 1907 had you lived in the city of St. Louis?

A. Thirty years.

X Q. 107. During the year 1906, did you have occasion to be in the neighborhood of Union and Cabanne Streets at any time?

A. I can't recall it.

Mr. Jones: Objected to as improper cross-examination.

X Q. 108. Do you recall the public school building at Union and Cabanne Streets?

A. I am not positive about it.

X Q. 109. Do you know a public school here in St. Louis commonly called the Clark School?

Mr. Jones: Same objection.

A. I think I have heard of it.

Q. 110. But are you not familiar with that school or its location?

A. No.

X Q. 111. I call your attention to Q. 63 of your present deposition,

[fol. 411] and ask you if it is not a fact that your answer as transcribed by the Reporter is incorrectly transcribed and should have been as follows: That looks like a tower to a concrete spout apparatus, but there is nothing on there that I can identify?

A. Yes.

X Q 112. Are you willing to say that the sketch which you have produced and which has been marked Defendants' Exhibit 37 is in all particulars like the sketch which you say Bankes showed to you in 1907?

A. I cannot say that it is in all particulars exactly the scheme that Bankes proposed.

X Q. 113. Now, isn't it quite possible, Mr. Goebel, your recollection of that Bankes sketch may have been modified or changed by structures which you have seen in recent times?

A. There is a possibility of that, but every time that I saw the evolution of the concrete mixture as we used it in the beginning and today, I always thought of the scheme that Bankes proposed, in that it seemed to bear out his idea.

X Q. 114. And you considered the apparatus at the American Theater Building to be a practical carrying out of the idea which you say Bankes had disclosed to you in 1907?

A. Yes.

Q. 115. That is all.

Redirect examination:

R. D. Q. 116. Please read your answers to Qs. 19 and 20 in the Canadian case, which Mr. Hood read to you and explain what you meant therein when you stated that the boom was to be supported on top of the tower.

A. The top of the boom—the top of any boom is always supported [fol. 412] by means of a cable from the boom to the mast, which in this case the mast would be the tower. And it was to swivel at the bottom so that it could be moved from either side, moved to either side.

R. D. Q. 117. You have not answered the question which was related to the supporting of the boom "on top of the tower."

A. I answered that the boom was to be supported on top of the tower by means of a cable extending from the end of the boom to the top of the tower.

R. D. Q. 118. You did not mean then that the entire boom was resting on the highest point of the tower, but that the upper end of the boom was connected with the top of the tower; is that it?

Mr. Hood: Objected to as leading.

A. I did not mean that the boom itself rested on the top of the tower, simply that the upper end of the boom was fastened to the top of the tower.

R. D. Q. 119. Mr. Hood has called your attention to the fact that in this Canadian testimony, in referring to the boom apparently,

you stated, "I don't know anything about that," and today you make a sketch of apparatus showing the relation of the boom to the rest of the outfit. Where did you get this information which enables you to make this sketch?

A. What I meant to convey was that I did not know anything about the details of this construction, but simply knew and remembered the general scheme.

R. D. Q. 120. In any conference or correspondence which I or anyone else may have had with you regarding this suit, has any suggestion been given to you as to the manner in which this boom might have been located on the tower or is this sketch Exhibit 37 made from your own recollection?

A. Never was anything suggested to me by anybody regarding this sketch number 37.

[fol. 413] R. D. Q. 121. How do you fix the date of 1903 for the work on the Baden Reservoir?

Mr. Hood: Objected to as not properly redirect.

A. I remember that that was prior to the year of our World's Fair here in St. Louis.

R. D. Q. 122. Did you inspect the apparatus at the St. Louis Coliseum carefully or casually during its erection?

Mr. Hood: Objected to as not proper redirect.

A. Just casually from the street as I drove by.

R. D. Q. 123. Did you ever know parties named Black, Webb or Woodward, in connection with the American Theater Building?

Mr. Hood: Objected to as not proper redirect.

A. Webb or Woodward I can't recall, but remember Mr. Black as being the superintendent for the architect Mr. F. C. Bonsack.

R. D. Q. 124. In your answer to Q. 113, explain more fully what you mean by the "concrete mixture."

A. I really meant to say, the evolution of the system of handling concrete in structural reinforced buildings—concrete buildings.

R. D. Q. 125. By structural you mean steel framework or reinforcing rods or both?

A. When you say structural reinforced concrete you of course, eliminate steel structures, in other words, steel I-beams and columns.

R. D. Q. 126. Was there any arrangement on the American Theater Building chutes by which the angle of one chute could be changed relatively to the next chute section?

Mr. Hood: Objected to as not proper redirect and as leading.

A. Yes, he would lead those chutes from the tower a certain distance and then they would empty into a kind of a hopper that led into another chute which could be turned in any direction.

Recross-examination by Mr. Hood:

R. X Q. 127. The "sort of a hopper" which you have mentioned in your answer to question R. D. Q. 126 was supported upon a framework which is separate from the tower and was itself supported on planks laid from one beam to another of the steel framework of the building, was it not?

Mr. Jones: Objected to as not based on the testimony of the witness, as to these details.

A. As I said before these chutes were run from the tower to a certain place in the building and then entered into a hopper, this hopper might have been supported on a plank or on the I-beam.

R. X Q. 128. But that "sort of a hopper" which was associated with the spout which could be turned around was not itself carried by the tower in which the hoisting skip was located, was it?

A. The hopper referred to is a part of the chuting system. That had no connection with the tower, except that the ends of the chute that led to this hopper was connected to the hopper at the top of the tower.

R. X Q. 129. And the lower end of the chute which led from the tower to this "sort of a hopper" was itself supported on the framework which carried the "sort of a hopper," that is right, isn't it?

A. It may have been supported by that support or it may have been supported by one of the cables suspended from one of the I-beams above.

Deposition closed.

Signature waived.

[fol. 415] It is stipulated that if D. G. Scott were called as a witness to testify on behalf of defendants, he would testify that he is the manager of the St. Louis office of James Stewart & Company, Incorporated, with offices in Boatmen's Bank Building, St. Louis, and that semi-monthly progress photographs taken during the construction of the Ely-Walker Dry Goods Company Warehouse, St. Louis, show that on March 15, 1907, fifty per cent of the first floor forms were in place; April 1/07, thirty per cent of the second floor forms were in place and fifty per cent of the first floor concrete was poured; April 16/07, thirty per cent of the second floor slabs were poured; June 3/07, the entire sixth floor was concreted and by July 1/07, the eighth story reinforced concrete frame was complete.

It is stipulated that if Eugene Taylor were called as a witness, he would testify that during 1908 he had the contract from the Gray Construction Company to take a picture each week of the St. Louis Coliseum construction on Jefferson and Washington Avenues, St. Louis; that the said Coliseum to his knowledge was erected during July, August, September and October, 1908; that he took the original photographs from which the five cuts constituting part of Defendant's Exhibit 3 are reproductions, said photographs having been taken July 22, 1908, September 22, 1908, September 8, 1908, Octo-

ber 19, 1908, and October 27, 1908, the dates appearing on or under these respective photographs except that the picture stamped by the photographer September 8, 1908, has incorrectly printed under it the date of September 22, 1908, and the September 22, 1908 picture is incorrectly printed September 8, 1908. It is further stipulated that these half-tone reproductions may be used with the same force and effect as prints made at the respective dates from the original negatives.

[fol. 416] It is further stipulated that said Eugene Taylor would testify that he took the photograph "Defendants' Exhibit 22," August 27, 1908, at the request of Arthur L. Smith, and at his direction put on the negative, shortly after it was developed, the wording and the date appearing thereon; and that the print Exhibit 22 is a correct reproduction of said negative. It is agreed that the print may be used in lieu of a print made on the date given above.

By Mr. Jones: The testimony of W. L. Wimmer, whose name was given in the notice preceding the St. Louis depositions, was not taken, for the reason that the said Wimmer did not return from Florida as he had planned, and was therefore not available.

St. Louis, Mo., Feb. 12, 1921.

WILBUR B. JONES, another witness called on behalf of defendants, being first duly sworn, testifies as follows:

Q. 1. Please state your name, age, residence and occupation.

A. Wilbur B. Jones; attorney-at-law; 32; 4944 Lindell Blvd., St. Louis, Missouri.

Q. 2. Have you made any effort, at my request, to locate the original plates of the Tootle-Campbell Building, St. Joseph, Missouri, from which prints of Defendants' Exhibit 14 were made?

A. Yes; I wrote J. E. Pollock, commercial photographer, St. Joseph, Missouri, September 1st, 1920, asking if he had these plates and receiving no reply, wrote another letter September 9th, 1920, the second letter being returned without having been delivered. After writing my second letter of September 9th, 1920, to Mr. Pollock, I received from Mr. Pollock an answer to my first letter of [fol. 417] September 1st, which stated that he was now residing in Paola, Kansas, and was no longer in the photography business, and that he had no access to said plates but that his successor was E. F. Cook, 923 Jule Street, St. Joseph, Missouri. I received a letter from said Mr. Cook September 18th, 1920, stating that he did not have the original negatives of these plates in his files.

Mr. Hood: Counsel for plaintiff moves to strike the entire deposition as irrelevant and immaterial.

Signature waived.

Adjourned to meet in Chicago, Feb. 15th, 1921.

Chicago, February 15, 1921.

Parties met pursuant to agreement. Present: As before.

LEWIS A. STINSON, a witness produced, sworn, and examined in behalf of defendants, deposes and testifies as follows in answer to questions by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Lewis A. Stinson; fifty-six years; 171 N. Elmwood Ave., Oak Park, Illinois. I am a contracting engineer.

Q. 2. Have you had any experience in the erection of grain elevators?

A. Yes, twenty-five years' experience.

Q. 3. Were you connected in any way with the erection of an elevator in New Orleans for the Illinois Central Railway?

By Mr. Hood: Objected to as relating to matter not properly pleaded, and it is agreed that this objection may be considered as entered without repetition to all questions and answers relating to this particular subject-matter.

[fol. 418] A. I was engineer on the job.

Q. 4. Are you familiar with anything shown on blueprints G-1184 and F-825, constituting part of Defendants' Exhibit 29?

A. They were made under my instructions.

Q. 5. Explain a little more in detail what your connection was with this work and with these drawings.

A. These spouts were required to load a ship, what is known as "second-off," meaning one ship moored by the side of another would be tied direct to the dock. This necessitated a very long reach, and in order to support said spout the boom and fixtures shown on the drawing were worked out to meet that requirement.

Q. 6. What did you have to do with the drawings?

A. They were made under my direction in the office of the job, as well as all other general drawings in connection with elevator D and gallery system, for both D and E.

Q. 7. Did you personally have any part in making these drawings?

A. I personally made the sketches for the special appliances, and worked more or less on tracings.

Q. 8. Does your handwriting appear on either of these drawings?

A. My printing appears on the tracings from which these drawings were made.

Q. 9. Who was the Webster Manufacturing Company, whose name appears on these drawings?

A. They were the manufacturers of all machinery and equipment which was used on these jobs.

Q. 10. Did they manufacture the equipment for this particular job?

A. They manufactured all equipment for handling grain of every kind in the entire job, excepting engines, boilers and electrical apparatus.

[fol. 419] Q. 11. Did you personally see this equipment during its erection?

A. I supervised the erection of it. I was in daily contact with them.

Q. 12. Please describe briefly this New Orleans apparatus.

A. Said apparatus consists of a spout with an enlarged receiving end, inside of which is a wrought iron ring pivoted to same. At 90° from said pivot on circumference of ring are two ears, which were pivoted to the building supports. A boom, supported by pivot step at its lower end and placed directly under the common center of the upper support, standing at an angle of about 45°, is used for raising and lowering the outer end of said spout, allowing same to swing in an arc on a horizontal plane of about 180°. The base of the boom and the peak are fixed, and the raising and lowering of the spout is accomplished through a wire rope tackle, hitched at point of boom and spout. The line from said tackle follows the angle of the boom to a pulley block, which is yoked on pivot supporting the base of the boom and swinging with same, from which said line is led to the operating winch at a convenient height above dock level. The spout is provided with a telescopic end for reaching the various distances horizontally, which may be required, due to the various positions of ship.

Q. 13. Please refer to the detail drawings F-825, and state by number which is the wrought-iron ring pivoted to the spout.

A. No. 2, also No. 4—both pivoted. The answer does not exactly express a true condition, as No. 2 might be called a part of the spout. Is that all right?

Q. 14. Please refer to print G-1184 and mark with red pencil the means for supporting the ring from the building support that you have referred to.

[fol. 420] A. Witness writes "support" in connection with the lead line leading to the lower right-hand corner of the figure in the center of the sheet.

Q. 15. Can you point out the parts on print F-825 which are supported by this support?

A. No. 5.

Q. 16. Do you know anything about the apparatus shown in the remaining blue-prints in this Exhibit 29, i. e., G-581, G-575, G-1198, G-1651?

A. No.

Q. 17. Have you ever seen similar apparatus?

A. Yes.

Q. 18. About how early?

By Mr. Hood: Objected to as relating to matter not properly pleaded.

A. My memory is about 1904, this G-581.

Q. 19. This blue-print is labeled East Side Iron Elevator Co.; have you ever seen that particular apparatus?

A. I have seen that particular spout, yes.

Q. 20. About when?

A. I made frequent trips there, and I just can't associate the earliest date, but I saw that particular spout.

Q. 21. I am not sure whether you said you had seen the apparatus of the remaining three blue-prints?

A. No, I had seen the apparatus, but I am not familiar with it.

Q. 22. You mean you have seen similar apparatus, but not these identical structures?

A. Yes.

Q. 23. And your answer giving the date "1904" was intended to apply to these three prints?

By Mr. Hood: The question is objected to as leading and as not in accord with the previous testimony which, in referring to the year 1904, specifically referred to print G-581.

[fol. 421] A. No, I am not sure on date of these three spouts, but they are very familiar—very common.

Q. 24. Would you say they were common as early as 1907?

By Mr. Hood: Objected to as leading.

A. I could not say.

Q. 25. Can you produce any other drawings representing grain spouting apparatus which you personally were connected with?

A. John F. Metcalf Company's tracings WA-945 and 946.

By Mr. Hood: The answer is objected to as referring to matter not properly pleaded.

Witness produces two tracings, which are marked for identification "Defendants' Exhibit 38, Blue-Prints of Portland, Me., Elevator."

It is stipulated that blue-prints may be used instead of the original tracings.

Q. 26. Describe this apparatus briefly.

A. This apparatus consists of a spout with an enlarged end hinged to a turn-head, which revolves with the spout one-half circle of 180° , a boom pivoted on vertical center of said turn-head and fixed at upper end by a wire cable at an angle of about 45° . From the point of said boom a tackle is suspended, which works with a similar tackle permanently hitched to the spout. The raising and lowering is accomplished by wire cable and winch attached to the building structure.

By Mr. Hood: The answer is objected to as relating to matter not properly pleaded, and it is agreed that this objection may be considered as entered without repetition to all questions and answers relating to this subject-matter.

Q. 27. What was your connection with this work?

[fol. 422] A. General superintendent. I was also a partner in the John S. Metcalf Company.

Q. 28. Did you see this apparatus during erection and use afterwards?

A. Yes, sir.

Q. 29. Was this apparatus and the New Orleans apparatus successful or unsuccessful in operation?

A. Perfectly satisfactory in every respect.

Q. 30. About how long have these two equipments been in use?

By Mr. Hood: Objected to as immaterial, no showing being made that the witness has had any continuous knowledge of either apparatus.

A. The Portland, Me., equipment about twenty years; the New Orleans equipment fifteen years.

Q. 31. Have you seen either of them since they first went into use?

A. I have seen the New Orleans frequently, and Portland twice.

Q. 32. What is the purpose of the boom in these two equipments?

A. Its function is to raise and lower the spout, to reach the hatches of the ship under various conditions of load or tide; also to house the boom when swung clear of ship.

Q. 33. Explain what you mean by "house the boom."

A. When the ship leaves the dock the spout must be swung clear of the ship and held in position in a manner that will not interfere with navigation.

Q. 34. Explain the connection between the upper end of the spout and the part which extends into it, as shown in dotted lines, which permits this swinging movement you have referred to.

A. The dotted lines permit of vertical movement. The turn-head permits of the horizontal or swinging movement. (Witness [fol. 423] pointed to the flange about half an inch above the end of the spout.)

Q. 35. Explain the construction of this turn-head.

A. A cast-iron base is bolted to the building at the upper side; the lower side has a circular flange. The curved spout has a similar flange. The two flanges are held in place by a split collar, grooved to receive said flanges and fitting loosely.

Q. 36. Do the dimensions shown on these drawings represent approximately the size of the various parts as actually used?

A. The drawing is made to scale, with the exception of mechanical discrepancies of the same.

Q. 37. Please point to the part which permits the vertical movement you spoke of.

A. The outer end of the curved spout is changed from round to square; the upper end of the steel spout is also square, and connection is made by a rod on the upper side, forming a pivot. (Witness points to the upper corner of the long inclined spout.)

Q. 38. The rod is not shown in the drawing, is it?

A. Not on general drawings.

Q. 39. Was this hinged and swivelled connection a new thing at the time this Portland elevator was built about 1901?

By Mr. Hood: The question is objected to as assuming a fact which has not been testified to by this witness, or any other witness.

A. No. It was used in 1900 in Newport News, Va., and about 1896 at Southport, La.

Q. 40. Aside from the Portland and New Orleans elevators, have you ever seen any other elevators prior to 1907 in which the spout was supported by a horizontally swinging inclined boom, as distinguished from a horizontally swinging horizontal boom?

[fol. 424] A. Newport News, in 1900, and Southport, La., in 1896.

By Mr. Hood: Objected to as relating to a matter not properly pleaded.

Q. 41. Prior to 1907, did you ever see a swivel connection such as sketched in red pencil in section on print G-575?

A. That was used in Newport News and Portland—that section.

Q. 42. Have you had any experience in concrete work?

A. Yes, twenty years of it.

Q. 43. Is there any reason why the spouts which you erected in New Orleans and Portland could not be used for concrete as well as grain?

A. I know of no reason provided the angle was sufficient and the concrete was mixed at the usual consistency.

Q. 44. What is the usual consistency at the present time?

A. About 12 per cent water, or so that material will flow.

Q. 45. What is the practice today as compared with the practice when you built the Portland elevator, for example, with reference to the amount of water used in concrete?

A. It is made much wetter today than it was then. The mixture on that particular job would stand at an angle of about 40° on the mixing board.

Q. 46. Do you mean that a pile of it would assume that slope?

A. That was the angle of natural repose.

Q. 47. What is the angle of repose of modern wetter concrete?

A. It flows quite freely. If placed on a flat board most of the mortar will run out of the stone.

[fol. 425] Q. 48. Do contractors in their work encounter the same problems on the various jobs they handle?

A. Rarely ever the same conditions.

Q. 49. Have you seen the chutes used at the present time for distributing concrete from towers?

A. Yes.

Q. 50. What are the different ways of supporting them?

A. I have seen cables used, trestles, a boom, or supported from the boom derrick on the job, if there was one, and from a number of tackle leading from a pilot wire.

Q. 51. You have described booms for supporting chutes on grain elevators. What other arrangements have been effected for supporting grain chutes or pipes prior to 1907?

A. A counterbalance spout, the trolley spout, and the mast spout.

Q. 52. Have you ever seen grain spouts supported on a frame or trestle?

A. Yes, the Missouri Pacific elevator in Kansas City; also an

elevator in Buffalo—I can't just name the elevator now, but it's down about the canal.

Q. 53. What was the standard practice about 1905-06 in elevating the concrete from the mixer to the plane of the different floors of a concrete building under erection?

By Mr. Hood: Objected to as incompetent.

A. A bucket or skip was used in a tower, which automatically dumped at the desired level into a receptacle from which the trucks or wheelbarrows were filled.

Q. 54. Are you familiar with the apparatus shown opposite page 42 of "Defendants' Exhibit 21, Ransome Catalogue"?

A. Yes, I have seen it used.

Q. 55. About how early?

[fol. 426] A. I won't be sure about this particular device. I saw similar used about 1905.

Q. 56. I hand you copies of a number of patents set up in the answer in this suit, and will ask you to glance at the drawings and read the name and number of any disclosing apparatus that you may be familiar with.

A. Edwards & Kelly, 366,468; McLennan, 371,343; Robinson, 524,984; Bird, 582,598; Bellinger, 605,375; Robinson, 622,019.

Q. 57. If you are familiar with the Mayo grain spout, please describe it.

A. The Mayo spout is made in two sections, pivoted about its center, or at a point which will accommodate it to its various requirements. The upper end is supported from a turn-head bolted to the building; the bottom end is carried on casters or rollers. A support is placed near the center pivot and hitched to a trolley, which rolls on a circular track supported to the building, allowing the spout to make a complete circle.

Q. 58. Are you familiar with any of the apparatus illustrated in the marked pages of Defendants' Exhibit 12, Webster Manufacturing Co.'s catalogue?

A. Page 168, page 193, page 197, page 201, page 235 and page 241. I am familiar with all of that material.

Q. 59. Have you ever seen any of the grain elevators illustrated in Defendants' Exhibit 28, George M. Moulton & Company's book?

A. I have seen the West Shore elevator, page 25.

Q. 60. Referring to the apparatus you describe as the "standard practice" about 1905-06; what was the location of the "receptacle" with respect to the height of the building?

By Mr. Hood: Objected to as incompetent.

A. Some used a skip with a door in the bottom; others dumped. It was very common to make the hoisting skip on the job. It was [fol. 427] shifted to meet the requirements of the material—placed from floor to floor; sometimes one on every floor.

Q. 61. Prior to this time referred to, had you ever seen a boom, the lower end of which could be shifted vertically?

A. Yes, I had, for hoisting steel—reinforcing steel.

Q. 62. Do you use concrete chutes at the present time in your own work?

A. Very seldom, if ever; and then very short ones.

Q. 63. How do you place the concrete?

A. Two-wheel carts and wheelbarrows.

Q. 64. A prior witness, Anderson, suggested in his testimony that the double ring arrangement of print G-1184, the New Orleans job, in some way restricted the movement of the spout in its side swing and prevented it moving in an arc which is practically horizontal. Can you explain this difficulty?

A. I didn't know it existed. It has limitations when raised very flat—very high—due to the fact that the metal of the spout comes in contact with the supports.

Q. 65. In actual practice, how far could this spout be swung to one side, assuming that it remained in substantially the inclined position shown in this blue-print?

A. In actual practice I never saw it foul or engage.

Q. 66. Please answer the previous question.

A. About a half circle, if I understand your question right, the swing of a half circle.

Q. 67. Have you ever seen concrete spouts supported from a tower in the neighborhood of the steel mills which border the lake between Chicago and Gary?

By Mr. Hood: Objected to as irrelevant and immaterial and as relating to matter not properly pleaded.

[fol. 428] A. I saw some short spouts used while the various steel mills were being built in that location.

Q. 68. Are any of these illustrated in Defendants' Exhibit 19 catalogue?

By Mr. Hood: Objected to as incompetent and as relating to an exhibit which was published subsequent to the date of application upon which the patent in suit was issued.

A. I saw the apparatus used on the ore docks, Cincinnati, Hamilton & Dayton Railroad, Toledo (pp. 26-29).

Q. 69. Have you ever seen the apparatus of page 2?

By Mr. Hood The previous objection is repeated.

A. This looks very familiar.

Q. 70. Did you ever see the apparatus of photograph C of Defendants' Exhibit 17?

By Mr. Hood: Objected to as relating to subject-matter not properly pleaded, and also to an apparatus which, according to the previous testimony of other witnesses, was not produced until after the date of the application upon which the patent in suit was issued, and therefore irrelevant and immaterial.

A. Yes, they controlled the spout by two booms—nothing unusual about the spout—a plain spout.

Q. 71. When and where did you see this?

A. In South Chicago, as I remember, ten years ago, maybe a little more. I won't be sure about the date.

Q. 72. What were the circumstances attending your visit?

A. I was doing work in South Chicago about the time and was very much interested, and made a visit over that plant and to Gary, at which time we were shown through the various furnaces and shown their various apparatus and construction.

Q. 73. How far along was the Gary plant at that time?

[fol. 429] A. A certain part of the Gary plant was running or some part of it was running, but the place was yet under construction. The side walks were not built, and quite difficult to get around—we had to follow railroad tracks.

Q. 74. Who was with you on that visit?

A. Mr. Jones was with me, who was in charge of the Iroquois furnace work. The Mill Company entertained the Board of Internal Combustion Engineers—I think that was who they were.

Recess for luncheon.

Q. 75. Who was the draftsman who made the drawings of these New Orleans tracings, G-1184 and F-825?

A. I expect Fred Church. F. C. are the initials on them.

By Mr. Hood: Objected to as incompetent and immaterial.

Q. 76. Is this the same party F. A. C. whose initials appear on print G-1651?

A. I would say so, because of the similarity of the lines. The initials are the same.

Q. 77. Where is Fred Church?

A. He is in California.

Q. 78. Aside from the initials, have you any recollection of any work he did on these tracings?

A. None whatever.

Q. 79. Then how do you recognize his name from the initials?

A. His initials are F. A. C., and I borrowed him from the Webster Manufacturing Company to take to New Orleans, and these initials "F. A. C." looks as if it were the same man.

Q. 80. What was he doing in New Orleans?

A. He was working for me on drawings for the Illinois Central work in New Orleans.

[fol. 430] Q. 81. What drawings was he working on?

A. On Illinois Central work.

Q. 82. What kind of work?

A. Grain elevator, dock spout, building construction generally and machinery.

Q. 83. Did the dock spout have anything to do with the dock spout in this blue-print we have been talking about?

A. I don't know anything whatever about them (G-1651, G-581 and G-1198 of Exhibit 29). This print was made there, G. 1184.

Q. 84. What I wish to know is, were you including G-1184 in your answer to Q. 78?

A. Those were the ones I meant (G-581, 1651 and 1198).

Q. 85. Are you familiar with the apparatus of Defendants' Exhibit 30?

A. No, sir, that is new to me.

Q. 86. You mean that you have never seen this coal-handling plant of the Baltimore & Ohio Railroad?

A. I did not erect it or put it up. I have seen the equipment.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 87. When you were describing the apparatus shown in print G-1184, which forms part of Defendants' Exhibit 29, you said that the pivotal axis upon which the lower end of the boom was supported is directly under the common center of the rings by which the upper end of the chute is supported, did you not?

A. I said so in connection with the other drawings.

X Q. 88. I find that Q. 12 asked you to describe the New Orleans apparatus. The apparatus shown in G-1184 is the New Orleans apparatus, is it not?

A. Yes.

[fol. 431] X Q. 89. And in your answer to Q. 12 you stated that there was "A boom, supported by pivot step at its lower end and placed directly under the common center of the upper support, * * * " did you not?

A. I did, I meant the upper support for the guy line which supports the upper end of the boom.

X Q. 90. In this apparatus which we are now discussing the vertical axis of the boom was about 2 feet in advance of the intersection of the axes of the two rings by which the upper end of the chute was supported, was it not?

A. It is shown here that way (witness refers to the drawings) but was lessened about 6 inches in construction.

X Q. 91. I understood you to say in your direct examination that one of the rings, which have been previously marked "2" and "4" in print F-825, was pivoted to the upper flared end of the chute section; did I understand you correctly?

A. I can't say whether you did or not. I don't know.

X Q. 92. You mean that you don't know whether I understood correctly?

A. Sure.

X Q. 93. Well, did you say that one of those rings was pivoted to the upper end of the chute section?

A. I did say that.

X Q. 94. To what was the other ring connected?

A. Which ring do you refer to now? Ring No. 2 is pivoted to No. 4; 4 likewise is pivoted to 2. No. 4 is pivoted to hanging bars marked 5; the hanging bars are bolted to outlets of gallery.

X Q. 95. Now which ring was pivoted to the chute, which is marked 1?

A. 4.

X Q. 96. And to what is No. 4 pivoted?

[fol. 432] A. Pivoted to 2.

X Q. 97. Was ring No. 2 connected in any way to anything else besides being pivoted to No. 4?

A. Riveted to the spout.

X Q. 98. So that ring No. 2 was riveted to the upper end of the spout, and was so placed that the axis of the perforations of the ears 3 were parallel with the face of the tower structure, and thus provided a horizontal axis for the chute, so that the outer end of the chute could be moved up and down; is that right?

A. Yes, sir.

X Q. 99. And the ring 2 was pivoted inside the ring 4, is that right?

A. No, sir.

X Q. 100. Was it outside the ring 4?

A. Ring 2 is outside of ring 4.

X Q. 101. And ring 4 was pivoted on the ears 5, which were stationary; is that right?

A. That's right.

X Q. 102. Now, which axis of ring 4, the long one or the short one, was pivoted to the ears 5?

A. The narrow way was pivoted to ears 5.

X Q. 103. And that formed an axis, a pivotal axis, for ring 4 on the stationary support and at right angles to the tower structure; that is, in a plane parallel with the plane in which the spout could be swung up and down; that is right, isn't it?

A. Yes, these ears gave the up and down movement.

X Q. 104. Do you mean that the up and down movement of the outer end of the spout was due to the fact that there was the capability of swinging about the axis formed by the ears 5?

A. The up and down movement was in ears 5 and the narrow way of the ring.

X Q. 105 Well, then, if the up and down movement of the outer [fol. 433] end of the spout was accomplished by reason of the swing about an axis furnished by the stationary ears 5, how could the chute have a sidewise movement?

A. Through these ears swinging—by the ears on ring 2.

X Q. 106. The ears 5 were stationary, weren't they?

A. Yes, sir.

X Q. 107. Was the line extending from the perforation of one ear 5 to the perforation of the other ear 5 parallel with the face of the tower, or at right angles to it?

A. Parallel with the face of the gallery.

X Q. 108. And the long axis of ring 4 was pivoted on the ears 5 and was parallel with the face of the gallery?

A. The short axis of ring 4 was pivoted on ears 5 and parallel with the face of the gallery.

X Q. 109. And the fixed inclined spout that is shown in dotted

lines at the upper part of print G-1184 projected down into ring 4; is that right?

A. Yes, sir.

X Q. 110. So that ring 4 had a limited swing on an axis parallel with the face of the gallery or tower, this axis being a fixed axis furnished by the ears 5; is that right?

A. Yes, sir.

X Q. 111. And this is the axis that permitted an up and down swing of the outer end of the chute; is that right?

A. Yes, sir.

X Q. 112. And the ring 2 was pivotally connected to ring 4 on the long axis of ring 4, and the ring 2 was outside of the long diameter of ring 4; is that right?

A. Yes, sir.

X Q. 113. And this is the axis about which all sidewise swing or sidewise movement of the outer end of the chute must and did take place?

[fol. 434] A. Yes, sir.

X Q. 114. I suppose that when the chute was in its middle position, so far as any sidewise movement is concerned, ring 4 was horizontal, wasn't it?

By Mr. Jones: Instead of this detailed discussion of unassembled parts, it is suggested that the witness be asked to make a sketch showing the assembled rings, in order to clear up this matter.

A. Nearly so.

X Q. 115. Now, isn't it a fact that any sidewise swing of the chute in this apparatus would inevitably result in a raising of the chute?

A. If hanging like a pendulum, yes.

X Q. 116. If in the position illustrated in the print G-1184, the same thing is true, is it not?

A. Not to the same extent—to some slight extent, and the nearer level it got it would all disappear.

X Q. 117. Could the chute in the apparatus shown in print G-1184 ever be brought to a level position?

A. While not made for that position, I believe it can be brought to a level.

X Q. 118. How would you get it up past the end of the boom?

A. The gimbal, as I understand it, is the point under discussion.

X Q. 119. You appear to have misunderstood my preceding questions: Now let us get back to the spout or chute and assume that it is in the position shown in print G-1184; you have that in mind now, have you?

A. Yes.

X Q. 120. Now let us suppose that you wanted to swing the lower end of that chute to one side or the other from its middle position; what would you do to get that shift of position?

A. I would pull the spout around.

[fol. 435] X Q. 121. And that would make it swing, at its upper end, about an axis furnished by the long axis of ring 4, and that axis would be at right angles to the gallery or tower, and would be parallel with the plane of the chute; that is right, isn't it?

A. Yes, sir, as I understand it.

X Q. 122. You mean by that you understand that is the operation?

A. As I understand your question that is the answer.

X Q. 123. Is there anything about my question that is not perfectly clear to you?

A. Not a thing.

X Q. 124. And when you pull the lower end of the spout to one side or the other from its middle position, that lower end will always rise; will it not?

A. No.

X Q. 125. In what position of the spout can you get a sidewise movement of the end of the spout without getting a rising movement, assuming that the movement is away from the middle or neutral position?

A. The spout describes a very slight curve as it comes down here.

X Q. 126. I am not talking about the up and down movement of the end of the spout, which is to be accomplished around the axis which is furnished by the ears 5, but I am assuming that we are taking the apparatus in the position which is shown by this print G-1184, and I want to move the lower end of the spout sidewise through an angle of 90 degrees. Where will the end of the spout be, so far as its vertical position is concerned, when you have accomplished that 90 degrees sidewise movement?

A. As near exact the same height as can be.

By Mr. Jones: Counsel for defendants protests against this unnecessarily long hypothetical examination as to what might happen [fol. 436] with this apparatus. The witness has testified as to what the apparatus actually did in practice, and if plaintiffs' counsel does not agree with this operation, he is invited to produce a model demonstrating what he evidently considers to be the inoperativeness of the device. The questions are very confusing in view of the detached relation of the parts on the drawing, and the witness is advised that if he wishes he may answer these questions by making a rough assembly sketch illustrating his answers.

By Mr. Hood: Counsel for defendants has produced this witness and attempted to qualify him as an engineer. Counsel for plaintiffs protests against the improper interference with the cross-examination.

X Q. 127. You are willing to stake your reputation as an engineer on the correctness of your last answer, are you?

By Mr. Jones: Question objected to as immaterial.

A. There is a slight difference in height.

X Q. 128. You are sure there is only a slight difference?

A. All the difference is due to the angle of offset of the ears 3 from the plane of the ring 2 at 90 degrees.

X Q. 129. Now, Mr. Stinson, I don't want to get you confused, nor to take any advantage of any possible confusion, and so I am

going to ask you if it isn't a fact that if you should take this precise apparatus that is illustrated in print G-1184 and swing the lower end of the spout to one side or the other from the plane in which the apparatus is illustrated in this print, and you carried that movement through an angle of 90 degrees about the axis, the long axis [fol. 437] of ring 4, the lower end of the chute or spout would then be up on a level with the upper end of the spout, and the spout would no longer be inclined downwardly, but would be horizontal?

By Mr. Jones: It is suggested that the question state whether the spout is to swing in a single plane only at right angles to the plane of the blue-print, or in some other plane in this assumed movement.

By Mr. Hood: The question assumes that there will be no change in the angle of the boom and no change in the length of the suspension means which connects the upper end of the boom with the chute.

A. The level position of the spout can't be swung.

X Q. 130. Please read the question.

A. I can't answer the question after reading it again.

X Q. 131. You mean that you have made the best answer you can make to X Q. 129?

A. As I understand that question, that is the best I can do. The spout will not swing in a level position beyond the range of the gimbel joints. This is the limit (witness points to print G-1184).

X Q. 132. You mean that the full line position of the inclined spout shown in print G-1184 is the highest position to which the spout can be swung in the plane of the drawing?

A. It is the highest position that the spout worked satisfactorily under a shop test.

X Q. 133. But isn't it a fact that with the parts shown in the full line position in print G-1184, if you tried to swing the spout to one side or the other, the lower end of the spout would rise?

A. The spout would rise in that position.

[fol. 438] X Q. 134. And if you attempted to swing the spout as much as 90 degrees to one side of the plane of print G-1184, the lower end of the spout would at the end of the 90° movement inevitably be raised so as to be level with the receiving end of the spout if the joint which you have called the gimbel joint would permit any such movement?

A. No.

X Q. 135. You are right sure of that, are you?

A. Experiment shows different.

X Q. 136. And you are right sure of that?

A. Yes.

X Q. 137. Now, isn't it a fact, Mr. Stinson, that the only sidewise movement of the delivery end of the spout is permissible because of the pivotal mounting of the ring 2 upon the ring 4, and that the axis of that pivotal mounting, which permits sidewise movement of the spout, is an axis which at all times is at right angles to the face of the tower or gallery?

A. That is correct, at right angles.

X Q. 138. When the spout is in the position shown in dotted lines in print G-1184, any sidewise movement of the lower end of the spout is accompanied by an upward movement of the lower end of the spout, isn't it?

A. At this radius, yes, sir.

X Q. 139. Well, the radius would be whatever the length of the spout is?

A. Whatever the length is, yes, sir.

X Q. 140. And a sidewise movement of 90° would inevitably bring the discharge end of the spout up to the point of the pivotal axis about which the sidewise movement takes place, wouldn't it?

A. That is an impossible position; it can't be done with that spout.

[fol. 439] X Q. 141. And that impossibility of movement is due to the fact that rings 2 and 4 will be limited in their swing because of the projection of the fixed spout down into the rings; isn't that right?

A. Not exactly, that is one objection.

X Q. 142. Well, then, as a matter of fact the apparatus which is shown in this drawing G-1184, that is an apparatus built in accordance with this drawing, will not possibly permit a swinging of the lower or discharge end of the inclined spout or chute from side to side through an angle of 180° , or anywhere near it?

A. Yes, when the angle of the spout does not exceed 45° .

X Q. 143. Well, now let us assume that the downward inclination of the spout is 45° , that is, half way between horizontal and vertical; now do you wish to be understood as saying that an apparatus built in accordance with the showing of print G-1184, you could swing the lower end of the inclined chute, this 45° inclined chute, from side to side through an angle of 180° , so that at one side of its swing it would lie parallel with the tower or dock and at the middle of the swing it would be projecting at right angles to the line of the dock, and at the other end of its swing it would lie again parallel with the dock?

A. They are performing that very function through 170° arc. Fifty-one of these are doing that.

By Mr. Jones: The questions are objected to, because in some instances they assume movement about a single pivotal support only, and in other instances they bring in both supports, which is possibly responsible for the unnecessarily long cross-examination on this point.

By Mr. Hood: The statement of counsel for defendants is not supported by the questions.

[fol. 446] X Q. 144. And under the conditions assumed in the preceding question you think the lower, or discharge, end of the chute will always be at substantially the same height or level?

A. That is the case as they are working in New Orleans.

X Q. 145. In actual use in loading ships the sidewise swing,

which is necessary for the loading operation, is comparatively little is it not?

A. No, they swing about 45° from the cross line of the dock, usually about three hatches are reached.

X Q. 146. When the chute was swung to one side or the other from its neutral or central position, was it necessary to hold it in the displaced position by some external holding means?

A. Due to the fact that the pivotal center of the spout is purposely placed back of the upper and lower supports of boom, the natural tendency is for the spout to span direct out, or at an angle of 90° to the gallery.

X Q. 147. I understood you to say that you had seen apparatus such as illustrated in print G-581 as early as 1904; are you sure of the year 1904?

A. 1901; this is similar. (Witness refers to Defendants' Exhibit 38.)

X Q. 148. In the apparatus illustrated in Defendants' Exhibit 38, why was the boom laterally offset from the chute, and what was accomplished by that lateral offsetting?

A. This spout was intended to swing one way only, and the offset was to prevent swinging in the wrong direction.

X Q. 149. And in this apparatus, Exhibit 38, there was the normal tendency, due to gravity, for the spout to stick straight out from the apparatus, that is, to occupy a neutral position, as illustrated in the two sheets of drawings forming Defendants' Exhibit 38?

[fol. 441] A. Yes, sir, that is done to control the neutral position.

X Q. 150. When did you last see the Portland, Maine, apparatus about which you have testified?

A. About four years after the job was completed, that would be about 1905—the early part of 1905. I am wrong on that date, it was a year later, I think it was 1906.

X Q. 151. That is the last time you saw that Portland apparatus was in 1906?

A. Yes, sir.

X Q. 152. When did you last see the New Orleans apparatus about which you have testified?

A. About a year and a half ago.

X Q. 153. In the New Orleans apparatus and in the Portland, Me., apparatus, about which you have testified, the step for the boom was a fixed step vertically?

A. Both of them were fixed steps.

X Q. 156. I suppose there is no reason why, in your opinion, the apparatus which is shown in Defendants' Exhibit 38, or that shown on print G-1184 could not be used for chuting concrete, if the concrete was wet enough; is that right?

A. I have very little knowledge about spouting concrete, but see nothing to prevent it from running in that spout.

X Q. 157. My question had in mind the apparatus as a whole; would your answer be any different?

A. I know no reason why it should not.

X Q. 158. You have been engaged in structural operations involving the placing of concrete in various positions and forms during the past twenty years; have you not?

A. Yes.

[fol. 442] X Q. 159. When did you first use chutes, through which you spouted a wet concrete mixture?

A. I never have to any extent.

Cross-examination closed.

Redirect examination by Mr. Jones:

R. D. Q. 160. In case you have not already stated, will you please state again when the drawings for prints G-1184 and F-825 were made?

A. Early in 1905.

R. D. Q. 161. Is this recollection of yours aside from the date appearing on one of the drawings?

A. Yes, sir, and there is other evidence I have that that was the year.

R. D. Q. 162. In the Portland apparatus of Exhibit 38, why did you wish the boom to swing only through a quarter of a circle?

A. There was no means of reaching a ship through any other angle.

R. D. Q. 163. That was a special case, then?

A. A special case.

R. D. Q. 164. During your cross-examination I prepared a rough sketch intended to be based on your answers relating to the gimbel joint for the New Orleans spout; aside from exaggerations of proportions, is this sketch approximately correct as to the relative arrangement of the various rings and other parts?

A. Yes, sir.

The sketch is marked for identification "Defendants' Exhibit 39."

R. D. Q. 165. Do you recollect when the drawings of Exhibit 38 were made?

A. About 1900 and 1901. They were commenced probably in 1900 and completed in 1901.

[fol. 443] R. D. Q. 166. Did you have anything to do with the making of them?

A. Only in a general way; I was on the construction work.

R. D. Q. 167. Do they embody your ideas?

A. I originated that boom (W. W., 946) as applied to a grain spout. I have also made some models, which we tried out before adopting them.

R. D. Q. 168. Will you make a model of the gimbel arrangement to demonstrate its operation?

A. Yes.

R. D. Q. 169. You state that the inclined spout in print G-1184 projected down into the ring 4; were you referring to the blue-print, or relying on your memory for this feature?

A. It has to go into the ring, otherwise the grain would leak out on the side in an angular position.

R. D. Q. 170. It did not project in very far?

A. No.

R. D. Q. 171. In actual practice, does it interfere with the full swing?

A. It never touches it at this angle. The angle shown on this drawing, which is, I think, about 50°.

(Witness indicates the spouts.)

Recross-examination by Mr. Hood:

R. X Q. 172. When you originated the boom in connection with the grain spout, as you have already testified in connection with Exhibit 38, I suppose you thought you had produced a pretty ingenious piece of apparatus?

A. I did not think anything of the kind. Spouts had always been handled by the ships' gaffs or booms. I merely transferred the ship boom, making it lighter, and almost copying it identically,—to the side of the building, and put in a light winch to handle the spout, [fol. 444] the same to take the place of the donkey engine which previously had been used on the ship deck.

Recross-examination closed.

Re-directed examination by Mr. Jones:

R. D. Q. 173. In modern concrete spouting apparatus which you have seen, wherein an inclined chute projecting downward from a tower is supported by a boom, is there anything materially different between such supporting arrangement and those which you have been testifying about in connection with grain elevators and ships?

A. I never examined them sufficiently close in detail to justify a positive statement; but I always supposed they were the same.

Deposition closed.

Signature waived.

Adjourned until Wednesday, February 16, 1921, at 10 a. m.

Chicago, February 16, 1921.

Parties met pursuant to adjournment; present as before.

HOWARD C. BLAKE, a witness produced, sworn and examined on behalf of defendants, deposes and testifies as follows, in answer to questions by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Howard C. Blake; thirty-six years; 4647 Greenwood Avenue, Chicago, Illinois. I have charge of the construction department of Morris & Company, packers, Chicago.

Q. 2. Please outline your past experience to date.

A. I got through Engineering College on 1906; went to California [fol. 445] in the spring of 1906, getting there three days after the earthquake. I went there as construction superintendent for an eastern firm to generalize myself on construction conditions and methods, and material conditions, as they expected to establish an agency there. I spent the following three and a half years in San Francisco and Los Angeles on construction work throughout the state. In 1910 I located in San Francisco on construction work for approximately two and a half years; then returned to Los Angeles, and was engaged in general construction engineering work until 1917, the outbreak of the war, when I entered the army in the Engineering Corps and went to France, returning to America, in July, 1919. My duties in France were chiefly construction. I had charge of the construction of Givres. I am now engaged with Morris & Company, in charge of their construction engineering department.

Q. 3. While in California, what facilities did you have for inspecting concrete work under erection?

A. I was sent there, particularly, to familiarize myself with conditions, and was furnished the necessary funds for expenses that this would cost; and I spent a great deal of the time going through California visiting the different buildings under construction, acquainting myself with architects, engineers, &c., so as to be thoroughly familiar with conditions when the firm did come west. I spent most of my time on this purpose, although I was also engaged in construction work as superintendent of construction in San Francisco, and later in Sacramento.

Q. 4. For what company were you superintendent of construction?

A. The Thompson-Starrett Company and the James Stewart Company. My connection with the Thompson-Starrett Company was [fol. 446] more in the light of a general utility man, to keep the several jobs well supplied with the necessary material, labor, &c., while with James Stewart & Company I was located on the Emporium Building, on the construction end. Later on, when I returned in 1910, I was associated as superintendent of outside construction with the Pacific Gas & Electric Company, during which period we built five reinforced concrete substations.

Q. 5. Are you familiar with the building activity which followed the earthquake in San Francisco?

A. Yes, I spent a great deal of my time—particularly the two years following the earthquake—in connection with the different investigations and reports that were made, due to the action of the earthquake and fire, on construction materials and methods.

Q. 6. About when was the earthquake?

A. About April 18, 1906.

Q. 7. What was the prevailing method of placing concrete in buildings built about the time of the earthquake or prior thereto?

A. What was considered the best method at that time was the Ransome system, consisting of a mixer, hoist, hopper and distribution by wheelbarrows.

Q. 8. Outline briefly the effect of the earthquake on the buildings

existing at the time, and its effect on the practice with reference to building concrete buildings thereafter.

A. The first part of that question is difficult. There are so many different types of buildings in old San Francisco, but, roughly, the most decided change, I believe, was the general adoption of more concrete in the construction of the new buildings. As a rule concrete was substituted for former brick and tile construction wherever possible. Shortly after the earthquake two types of buildings were [fol. 447] officially recognized by San Francisco, and generally throughout California, i. e., class A type, which consisted of a steel frame fireproofed by concrete; and class B building, which consisted almost entirely of reinforced concrete. This necessitated the more general use of wetter concrete than had been practiced heretofore, as walls and floors and fireproofing were of the minimum thickness allowed by safety, and could not be constructed with the older methods of dry concrete. The greatest change in the concrete construction at this time was the use of small reinforcing bars in place of larger reinforcing bars and a much wetter mixture for pouring the concrete.

Q. 9. What buildings withstood the earthquake and fire the best?

A. The three buildings that I am most thoroughly acquainted with were the Merchants Exchange Building, the Monadnock Building, and the Call Building. I think the name of this latter building has been changed since, but that was the name at that time. Those buildings were all of the larger, better type of building in San Francisco at the time of the earthquake, and of the three the Call Building stood the action of the fire the best. The Merchants Exchange stood the action of the earthquake quite well, but suffered from the fire. It had tile fire-proofing, and considerable damage was done to it. It is difficult to compare the buildings, because the fire conditions were different in the different parts of the city.

Q. 10. Were any of these buildings made of concrete?

A. There were none of them made entirely of concrete.

Q. 11. How extensively did you travel during the first four or five years you were in California?

A. For the first three years and a half I traveled about every three months from San Francisco to Los Angeles, and the trip was usually in the neighborhood of two weeks.

[fol. 448] Q. 12. Did you visit any other parts of the Pacific coast?

A. Occasionally I went up to Portland and Seattle and through British Vancouver, and down into Texas. I was not so much interested in the construction work of the north as I was of California proper.

Q. 13. Did you ever hear of the Timken Building in San Diego, or the Majestic Building in Los Angeles?

A. I have seen both buildings, and was at the Majestic Building in Los Angeles during its construction, and at the Timken Building, San Diego. I was more interested in the Majestic Building than in the Timken Building.

Q. 14. About when did you first see these two buildings?

A. I saw the Majestic Building in either February or March,

1908, along in that period—first quarter of the year—and the Timken Building in San Diego in the summer of the same year.

Q. 15. Do you recall seeing used on either of these buildings any concrete-distributing apparatus different from what was customarily used at that period elsewhere?

A. I do not recall having seen anything of that caliber on either building; yet I believe if there had been anything unusual I would have seen the same at the time I visited the building.

By Mr. Hood: That portion of the answer beginning with "yet I believe," and continuing to the end of the answer, is objected to as volunteered.

Q. 16. Did you take particular note of such apparatus as was used?

A. No, I have no recollection of the apparatus that was used.

Q. 17. To what extent did you keep in touch with developments in concrete construction work during the years 1908, 1909 and 1910, for example?

[fol. 449] By Mr. Hood: Question objected to as immaterial in so far as it relates to the years 1909 and 1910, on the ground that everything subsequent to January 21, 1909, is subsequent to the date of the application for patent on which the letters patent in suit were issued.

A. I made a definite point of endeavoring to keep familiar with all construction methods and conditions during this period.

Q. 18. State more specifically how you did this.

A. Through three chief channels—engineering periodicals, the local engineering societies, and my own trips.

Q. 19. While you were on the coast, did you know anything about the Concrete Appliances Company or the Engstrum Company?

A. I knew the Engstrum Company, or rather the older Mr. Engstrum very well. The Concrete Appliances Company I did not know.

Q. 20. While on the coast, did you ever see or hear of concrete-distributing apparatus comprising a tower, a hoist, and a hopper with a chute extending downwardly and outwardly from the hopper and supported by a swinging boom mounted on the tower?

A. We had a number of apparatuses of that or similar construction in use all through the Pacific coast, but more frequently, I should say, in the southern California district, during the period of 1912.

Q. 21. During what period did you have headquarters in Los Angeles?

A. My headquarters in Los Angeles was during the latter part of 1912 on through to 1917.

Q. 22. During the period prior to 1912, did you ever hear of any apparatus such as you have just referred to, including a boom, used by the Engstrum Company?

A. Not to my knowledge, I do not remember ever having seen any

[fol. 450] such apparatus during the period that I was in Los Angeles, up to the middle of 1909.

Q. 23. Were your relations with the Engstrum Company such that you might be expected to know of any radically new apparatuses they were promoting?

A. Mr. Engstrum knew the reasons for my trips and was acquainted with my eastern connections, and that is the reason I presume that anything that was new or of advantage in the market would have been mentioned to me by him. We talked over many things connected with the concrete lines, and I have no recollection of his bringing up anything about concrete-distributing systems, although we talked about concrete methods.

Q. 24. What can you say as to the work of the Pacific Gas Light & Electric Company during the year 1908-1910?

A. We started running from Berkley through the northeast, doing the work with our own men and material. At that time I had charge of the construction of these buildings. We used a home-made hoist, a hopper, and trough-distributing system supported by a gate, or similar to the chute constructed with a gate or horse on the end, dumping the concrete into the wheelbarrows or into the forms, as was necessary, directly from the hopper. I believe that if any apparatus had been on the market that would have been cheaper for us to have used, we would have used it. To my best knowledge we were never approached with any of these.

Q. 25. If you dumped the concrete directly from the hopper into the wheelbarrows, what function did the chutes perform?

A. We dumped it from the hopper to the wheelbarrows directly for the foundation work and till the walls reached a height equal to the height of the mixer mouth. The trough was not used for these operations.

[fol. 451] Q. 26. Under what conditions did you use the chutes or troughs?

By Mr. Hood: The question is objected to as relating to occurrence subsequent to the date of filing of the application upon which the patent in suit was issued; and it is agreed that this question will be considered as entered to all questions relating to occurrences subsequent to said date.

A. After we got above the height of the mixing mouth of the walls, we erected a hoist and hopper, placing the hopper about 12 feet above the roof level, directed our concrete through the hoist into the hopper, and distributed it from the hopper to the wheelbarrows or walls by the chutes, where the chutes were long enough to reach the walls.

Q. 27. When and where did you do this?

A. I did this at Berkeley, Cal., San Rafael, Cal., Petaluma, Cal., during 1909. I should say.

Q. 28. Did you ever know a contractor named "Fellows" on the Pacific coast?

A. Yes, I knew Mr. Charles A. Fellows in Los Angeles.

Q. 29. Do you know anything about any of the structures under erection in the photographs which I hand you?

A. I do not know anything about No. 1 while it was under construction. I know the building as completed, station and hotel at Barstow. I know the Sante Fe depot at Redlands, No. 2. I don't know what No. 3 is at all. No. 4 is the same as No. 2. No. 5 I do not know in this view. No. 6 the same answer. No. 7, I know the Sante Fe buildings, at San Bernardino, of which the store house is one. I do not know this view.

By Mr. Hood: The answer is objected to as relating to matters not properly pleaded.

[fol. 452] Q. 30. Do you know where these photographs came from?

A. I have seen a letter to you from Mr. Fellows mentioning the photographs as sending them to you.

By Mr. Hood: Objected to as irrelevant, immaterial, and lacking in every possible element necessary to identify either the photographs or any of the structures supposedly illustrated thereby.

By Mr. Jones: To identify the photographs for later reference, they are marked "Defendants' Exhibits 40, Photographs of Pacific Coast Structures."

Q. 31. Did you see the Richmond roundhouse under construction in California?

A. I did not.

Direct examination closed.

Cross-examination by Mr. Hood without waiving objection:

X Q. 32. What was the full name of the Mr. Engstrum to whom you have referred?

A. F. O. Engstrum used, and I have always understood his name was Fred.

X Q. 33. How old a man was he at that time?

A. I have no personal knowledge, but I should say about fifty-eight years of age.

X Q. 34. In 1908?

A. Yes.

X Q. 35. How often did you meet this Mr. Engstrum in January, 1908?

A. I do not believe I met Mr. Engstrum in January, 1908.

X Q. 36. When did you first meet Mr. Engstrum?

A. I think it was in the late summer of 1906.

X Q. 37. When did you see this Mr. Engstrum for the first time in the year 1908?

[fol. 453] A. I am not certain as to that, but I believe it was during August. I would like to change that "August" to the latter part of the summer.

X Q. 38. Where did that meeting take place?

A. I think it was in the office of Mr. Parkinson, architect, in Los Angeles.

X Q. 39. How long did you talk to him at that time?

A. There was a conference there between Mr. Engstrum and Mr. Parkinson, and I spoke to Mr. Engstrum several times during the meeting—a matter of fifteen or twenty minutes, probably.

X Q. 40. You mean that this conference lasted about fifteen or twenty minutes?

A. No; the conference lasted considerably longer than that. Fifteen or twenty minutes applied to the length of time Mr. Engstrum and myself talked.

X Q. 41. What was the subject-matter of that conference?

A. Primarily cement.

X Q. 42. How did you happen to be in attendance at that conference?

A. One of Mr. Parkinson's chief engineers was a school-mate of mine, and I had merely dropped into the office to see him, and took the opportunity of asking Mr. Engstrum's advice on the European cements.

X Q. 43. Did you see or talk to this Mr. Engstrum during the month of December, 1907?

A. No.

X Q. 44. How often have you talked with Mr. Engstrum between the time you first met him in 1906 and the time you met him in Mr. Parkinson's office in the latter part of the summer of 1908?

A. About five times.

X Q. 45. Approximately when were these?

A. Twice in 1906, at least twice in 1907, and the other time in 1908.

[fol. 454] X Q. 46. What was the occasion of your first meeting with Mr. Engstrum in 1906?

A. To present a letter of introduction to Mr. Engstrum.

X Q. 47. And how long did you talk to him at that time?

A. Possibly half an hour.

X Q. 48. What time in 1906 did you next see Mr. Engstrum?

A. In the summer of 1906.

X Q. 49. Where did that meeting take place?

A. It was in Los Angeles, at the yards they held—I don't know the location of those yards.

X Q. 50. Did you ever meet a Mr. F. E. Engstrum?

A. I have met a son of Mr. Engstrum—whom I understand to be a son of Mr. Engstrum, I do not know his initials.

X Q. 51. Will you please briefly describe the man whom you met and understood to be a son of Mr. F. O. Engstrum?

A. My remembrance is vague. I would say he was about 5 feet 8 inches or taller, and of fairly heavy build, and I believe he was clean shaven.

X Q. 52. About how old a man would you have taken him to be at that time?

A. I don't know as I have any recollection.

X Q. 53. Where did you meet the younger Mr. Engstrum, and when?

A. When I met the younger Mr. Engstrum? At one of the local engineering meetings in Los Angeles. I believe I met him there; my recollection is very vague, as I never had any personal or business dealings with him. I don't remember when I met him, except that it was after 1912. If I met him before then I have no knowledge.

[fol. 455] X Q. 54. How long did your second interview with Mr. Engstrum, Sr., last?

A. I don't believe I know definitely, but they were practically all courtesy visits, with the exception of this particular visit when I asked his advice on the cements. I think I was usually with him for half an hour on, depending on how busy he was.

X Q. 55. What is your recollection as to the times and places of the two or three interviews you had with the elder Mr. Engstrum during the year 1907?

A. I believe that I met Mr. Engstrum, outside of the original meeting and the meeting in Mr. Parkinson's office, in the offices of the Engstrum Construction Company. I think my two visits to Los Angeles in 1907 were in the spring and early autumn.

X Q. 56. Are you unable to give the months of the year 1907 when these visits took place?

A. I cannot, for the spring; I believe it was in the month of September in the fall.

X Q. 57. At the time of your fifteen minute talk with the elder Mr. Engstrum in the latter part of the summer in 1908 in Mr. Parkinson's office, Mr. Engstrum was in conference with Mr. Parkinson relative to matters which were not any part of your business; is that right?

A. That is correct; that is, I presume he was with Mr. Parkinson, he was in Mr. Parkinson's office.

X Q. 58. That is, Mr. Engstrum was in Mr. Parkinson's office at the time you arrived in Parkinson's office; is that right?

A. Yes.

X Q. 59. And he was engaged in a conference?

A. Yes.

X Q. 60. So that your inquiry about European cement was rather in the nature of an interruption in that conference which Mr. Engstrum was holding?

[fol. 456] A. No, Mr. Engstrum simply gave me his spare time in the office.

X Q. 61. That is, while Mr. Engstrum was primarily engaged in a conference in the Parkinson office, he was able to give you some spare time?

A. He would come out from the inside office and talk to me, and go back again when he was called.

X Q. 62. Now, as I understand it, you have no recollection of the kind of apparatus that was used to handle the concrete in the fabrication of the Majestic Building in Los Angeles; is that right?

A. That is correct.

X Q. 63. When did you first visit the Majestic Building site?

A. During the first quarter of 1908—the latter part I believe, though I am not certain.

X Q. 64. What was the condition of the building at that time?

A. I should say the rough frame of the building was about 25 per cent completed.

X Q. 65. How many stories were completed at the time of your visit?

A. They were working on the second story.

X Q. 66. Do you mean by that that they were working at the level of what would be called the second floor, or the first floor above the ground level?

A. Yes.

X Q. 67. What was the character of this construction?

A. My impression is concrete and steel.

X Q. 68. Can't you give a little more definite description?

A. I mean by that steel frame and concrete floors.

X Q. 69. Were the columns steel or concrete?

A. I think all of the columns were steel, and also the trusses.

[fol. 457] X Q. 70. Were the columns encased in concrete?

A. I don't remember seeing any columns encased in concrete.

X Q. 71. There were steel beams or girders extending from column to column at each floor level; were there?

A. I don't recollect anything except the truss that was of steel.

X Q. 72. Were there concrete girders or beams extending from column to column at the floor levels?

A. There was concrete construction, but I do not remember the type of design.

X Q. 73. What character of reinforcement was used in the floor slabs?

A. I have no recollection.

X Q. 74. And during this visit in the latter part of the first quarter of 1908, did you go on to the work under construction?

A. I tried to see as many of the types of buildings as was possible, primarily for later checking of the cost of this work.

X Q. 75. I asked you if you went on to the work under construction?

A. This particular building?

X Q. 76. This particular building.

A. I was on this building to talk with the superintendent of the building.

X Q. 77. What was the name of the superintendent?

A. I have no recollection. I don't know as I heard his name.

X Q. 78. Did you talk with him?

A. Yes.

X Q. 79. How long?

A. In the neighborhood of fifteen minutes.

X Q. 80. Just where on the construction work did this conversation take place?

[fol. 458] A. I believe it was on the street level.

X Q. 81. Whereabouts on the street level?

A. I do not recollect. I walked into the building a short distance, and he met me—possibly 25 feet in the *the* building.

X Q. 82. Just where is this Majestic Building located in Los Angeles? (Witness pauses.)

A. It was about 400 Spring Street.

X Q. 83. Is it at the intersection of two streets?

A. No.

X Q. 84. How large a building is it, ground area?

A. I don't know what the depth of the building is. I should say the width was about 60 feet.

X Q. 85. And about where in the width of the building did you enter on the ground floor?

A. I don't believe I have any recollection at all.

X Q. 86. Your recollection of the details of this building and of this visit in the latter part of the first quarter of 1908 is pretty hazy, isn't it?

A. Of those particular details, yes. I didn't see anything that warranted me remembering anything. The information I was after was secured from the superintendent.

X Q. 87. How did you know he was the superintendent?

A. I presume I asked either him or somebody there.

X Q. 88. And what was the information you received?

A. Regarding the time of delivery of materials, means of securing materials, labor, and general working construction conditions.

X Q. 89. You mean by "time of delivery of materials" the period between the giving of an order and the time or arrival of the order of materials on the job, do you?

A. I do.

X Q. 90. When did you next visit the Majestic Theater after your [fo. 459] first visit in the latter part of the first quarter of 1908?

A. I doubt if I ever visited the building again.

X Q. 91. Do you know that the elder Mr. Engstrum is dead?

A. I don't know it definitely, and had not heard until just recently.

I believe that I made an error in the location of the Majestic Building. I should have said Broadway, between Sixth and Seventh. We always go by buildings out there and not numbers.

X Q. 92. You had been informed prior to today of the death of the elder Mr. Engstrum, had you?

A. Yes, I believe that information came to me within the last six months—I can't remember who gave it to me.

X Q. 93. What sort of equipment was visible to you on the Majestic Theater job at the time of your visit in 1908?

A. I have a recollection of material on the job, some forms standing, rock and sand, the usual appearance of a construction job under process.

X Q. 94. Where was the concrete mixer?

A. This is merely a thought, but I believe the mixer was in the front end of the building.

X Q. 95. Was there a hoisting rig?

A. My memory is vague on this point, but it seems to me that

they were working with a mixer and using the mixer. I do not remember any other parts of the concreting apparatus.

X Q. 96. From which direction did you approach the building?

A. From the front end.

X Q. 97. And from which direction along Broadway?

A. I presume from Sixth Street, as I had no occasion to be in the other end of town.

[fol. 460] X Q. 98. Were there existing buildings on either side of the theater site?

A. As I remember it, there were existing buildings on the north side,—the side towards Sixth Street.

Cross-examination closed.

Redirect examination by Mr. Jones:

R. D. Q. 99. How often after the summer of 1908 did you see Mr. Engstrum, Sr.?

A. I believe I saw Mr. Engstrum, Sr., once in the early part of 1909, on the Broadway Viaduct—I think they call it—where he had been having some trouble with some men. He talked with me at that time.

R. D. Q. 100. Do you recall whether you talked with any of the other men in Mr. Engstrum's organization during 1908 or later?

A. Mr. Engstrum introduced me to a number of them, but I had no dealings with any of Mr. Engstrum's Company, with one exception. I cannot recollect his name, but it was along about 1916.

R. D. Q. 101. Did you ever go above the first floor of the Majestic Building during erection?

A. No.

R. D. Q. 102. Aside from the visit you have referred to; did you ever have occasion to pass this building during its erection?

A. If I did, I have no recollection of it.

R. D. Q. 103. About when did you say you first saw or heard of chutes hung from a boom on a tower for concrete?

A. I don't believe I saw any or came in contact with them until about 1912.

Deposition closed.

Signature waived.

[fol. 461] HAROLD D. SQUIRES, a witness produced, sworn, and examined on behalf of defendants, deposes and testifies as follows in answer to questions by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Harold D. Squires; thirty-eight years; 745 N. Michigan Avenue, Chicago, Illinois. I am treasurer of the Metal Building Materials Company.

Q. 2. What is the nature of your business?

A. The manufacture of metal building specialties for concrete buildings.

Q. 3. What business were you in in 1906?

A. I was then treasurer of the William B. Hough Company, who were middle western agents for the Ransome Concrete Machinery Company, selling concrete mixers, and other concrete appliances, and reinforcing steel.

Q. 4. Can you identify Defendants' Exhibit 21?

A. This is a catalogue of the Ransome Concrete Machinery Company of New York, received by us, as indicated by our regular business stamp, on June 1, 1906.

Q. 5. What was the prevailing method of placing concrete in buildings at that time?

A. The prevailing method was the use of a wooden tower, in which was a hoist bucket which dumped into a hopper on floor level, and then distributed by means of carts or wheelbarrows to points desired. Also in the case of foundations, quite frequently troughs were used direct from the hopper or the mixer to the point of distribution in the foundations, these troughs generally being supported by wooden horses and moved by hand from point to point.

Q. 6. About how far could such trough reach?

By Mr. Hood: Objected to as asking for a statement of opinion rather than of fact.

[fol. 462] A. Depending upon the amount of drop to allow the concrete to flow, and consequently could be used to greater advantage in foundation work because of the greater drop they could get as against a floor level. In most cases the run did not exceed more than from 15 to 20 feet, although I have seen them carry it anywhere from 30 to 40 feet from the mixer or hopper.

Q. 7. Did you ever see in use, about that period, apparatus such as illustrated opposite page 42 of the catalogue Exhibit 21?

A. Yes, I saw at that time a great many in use, and we were selling, as a regular part of our business, the automatic dump bucket, hopper and carts, using that illustration, or a separate blueprint, for the contractor to build his tower.

Q. 8. Where was the hopper supported?

A. The hopper was supported on the outside of the tower, the inside of the tower being used for the hoist bucket.

Q. 9. How high was the hopper above the mixer?

A. The hopper was slightly above the level of the floor to be poured, and was taken up to a new level for each succeeding floor, making the distances from the mixer variable according to the floor to be poured.

Q. 10. How was the hopper or bin raised in practice?

A. Unbolted from the tower, and raised by means of block and tackle, again being re-bolted in place.

Q. 11. Is William B. Hough living?

A. William B. Hough died a year ago last May.

Q. 12. Did the William B. Hough Company ever represent any concern other than the Ransome Company?

A. Yes, quite a number, among them being the Concrete Appliances Company, of Los Angeles, Cal., from November, 1910, until the William B. Hough Company went out of business in 1913.

[fol. 463] Q. 13. Please explain the character of your business with this company.

By Mr. Hood: The question is objected to as wholly irrelevant and immaterial, in view of the fact that the period during which the Hough Company, including this witness, is said to have represented the Concrete Appliances Company is subsequent to the date of the patent in suit; also because the matter inquired about is not properly pleaded. Counsel for plaintiffs calls attention to the fact that no notice of the proposed examination of this witness has been given to counsel for plaintiffs, and while he does not object to the continued examination, in spite of lack of notice, nevertheless the right to recall this witness for further cross-examination as to any matters of relation between the witness, the Hough Company and the Concrete Appliances Company, upon adequate notice, to counsel for defendants, is hereby reserved.

A. We were to sell the right to use the system which we advertised as the G-Y System on a royalty basis, and furnish blue-prints and sell or rent materials, such as pipe, swivel pans, and other apparatus for use with this system of pouring concrete.

By Mr. Hood: The answer is objected to as wholly irrelevant and immaterial to any of the issues of this cause.

Q. 14. Have you preserved any of your correspondence with this company?

By Mr. Hood: Objected to as wholly irrelevant and immaterial.

A. At the time of going out of business in 1913, I destroyed practically all our correspondence and kept only old book-keeping and other matters of record.

[fol. 464] Q. 15. How do you know that your connection began in November 1910?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. In my files, among notations of agency agreements, I have there a notation to the effect that our agency with the Concrete Appliances Company ran from November, 1910, for a period of five years.

Q. 16. Can you produce any drawings of apparatus proposed or licensed by you about that period?

By Mr. Hood: Objected to as irrelevant and immaterial, and as relating to a matter not properly pleaded.

By Mr. Jones: Witness produces two groups of blue-prints, including also a pencil drawing, which groups are marked for identification "Defendants' Exhibit 41, Concrete Appliances Co. Apparatus," and "Defendants' Exhibit 42, William B. Hought Co. Apparatus."

By Mr. Hood: Objected to as wholly irrelevant and immaterial, not properly identified, and not properly pleaded.

Q. 17. Where did you get these two groups of drawings?

By Mr. Hood: Objected to as irrelevant and immaterial, and as relating to matter not properly pleaded.

A. From files of the William B. Hough Company which I have had in my possession since the William B. Hough Company went out of business.

Q. 18. Did the Concrete Appliances Company furnish or sell you any of the apparatus illustrated in these blue-prints?

By Mr. Hood: Objected to as irrelevant and immaterial, and as [fol. 465] relating to matter not properly pleaded.

A. The Concrete Appliances Company in the very beginning did furnish us with a swivel pan and a swivel for use at the end of the boom. From these and blue-prints which they sent us at that time we had material made up in Chicago. The blue-prints shown here in Exhibit 42 are not in all respects the same as blue-prints furnished us by the Concrete Appliances Company, as we found in practice that these would have to be changed and Exhibit 42 shows our revised prints.

Q. 19. Describe, briefly, the drawings of Exhibit 41.

By Mr. Hood: Objected to as irrelevant and immaterial, and as relating to matter not properly pleaded, and as relating to drawings not properly proven, or connected with plaintiffs herein.

By Mr. Jones: Since some of the tracings from which the blue-prints were made bear the name "Concrete Appliances Company, Los Angeles—St. Louis," opposing counsel is requested to produce the original tracings at the hearing if they are still in the files of the plaintiff company.

Counsel for plaintiff has not sufficient data to enable him to comply with the above noted request.

A. The first sheet, Concrete Appliances Co. Sheet No. 40, dated October 7, 1910, is merely a sheet for the calculation of strains. The second sheet, pencil sketch on white paper, dated September 9, 1910, shows the ironing for a 24-foot boom. This drawing was made in our office by Mr. Emtman. The third sheet, blue-print of the lay-out for a filtration plant at Grand Rapids, Mich., was one made by the chief engineer of the William B. Hough Company, dated January 11, 1911. The fourth sheet, blue print of the Concrete Appliances Company, dated April 30, 1910, Drawing No. 9 [fol. 466] and 10, is a blue-print given us for the making of pipe that went with this system. The fifth sheet, a blue-print of the Concrete Appliances Company,—date and number torn off—was given us at the time of signing the contract as an illustration of what could be done in this method of pouring concrete.

Q. 20. Who was Emtman that you referred to?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. Mr. Emtman at the time that we knew him was a building superintendent, and it was my impression that he was the practical inventor of this method of pouring concrete.

By Mr. Hood: The surmise of the witness stated in the last answer is objected to as irrelevant, immaterial, and incompetent.

Q. 21. Is he the Theodore Emtman at Los Angeles, whose name appears as the assignor to the Concrete Appliances Company of St. Louis of patent 948,723, set up in the answer in this suit, a copy of which patent I show you?

By Mr. Hood: The question is objected to as irrelevant, immaterial, and incompetent.

A. Yes.

Q. 22. Do you recall who first made use of apparatus of this general character through the efforts of your Company, as agent for the Concrete Appliances Company?

By Mr. Hood: Question is objected to as irrelevant and immaterial, as incompetent and assuming, in view of the lack of any adequate showing of alleged agency; also as relating to matter not properly pleaded.

A. Witherspoon-Englar & Company, contractors of Chicago, on [fol. 467] a job in Texas, and A. Monstead & Company, contractors of Milwaukee, on a job in that city.

Q. 23. You have stated that it was found necessary in practice to change the apparatus shown in the blue-prints of the Concrete Appliances Company; why was this necessary?

By Mr. Hood: Objected to as irrelevant and immaterial and as relating to matter not properly pleaded.

A. On the first two outfits which we had rented, the customers both experienced considerable difficulty, and we were obliged to send men to Milwaukee, and also a man from Los Angeles went to the Texas job. He did not give them any relief, and Witherspoon-Englar suggested that we allow them to open up the pipes which we had furnished, so that they would form troughs. This we, of course, allowed them to do, and Mr. Whipple, superintendent for the Monstead Company, was obliged to do the same thing on his job. Also, both companies had trouble with the swivel pan, and with some of the ironing on the booms, necessitating nearly a complete revision by us of material to be used with this system. Witherspoon-Englar had so much trouble with their outfit that they used it on only a small portion of the job, refusing to use it on the remainder.

By Mr. Hood: That portion of the answer relating to the movement of a man from Los Angeles to the Texas job is objected to as hearsay. The second sentence of the preceding answer is objected

to as hearsay, or as not the best evidence. The remaining portion of the answer is objected to as secondary and not the best evidence.

Q. 24. Do you recall about when you sold the apparatus to these two companies?

[fol. 468] By Mr. Hood: Objected to as irrelevant and immaterial, as relating to matter not properly pleaded.

A. One job in December, 1910, the other in the early part of January, 1911. The Witherspoon-Englar job was first.

Q. 25. Refer briefly to some of the changes represented by the revised blue-prints, Exhibit 42.

A. Sheet numbered 2 (the top sheet), revised April 6, 1911, is a tower swivel pan, which we were obliged to make larger on account of stoppages and also a more steep bottom. The same is true of the mast pan, sheet No. 2a. Sheet No. 3 shows our design of a trough as against the pipe shown by Concrete Appliances Company. Sheet No. 5 shows the revision in pipe connections which we made on pipe used from the end of the boom. Sheet No. 12 shows the revision of strapping the boom to make it more rigid. The remainder of the changes are merely those of dimensions, or slight changes in design.

Q. 26. Does sheet 23, dated May 1, 1911, show a closed pipe or an open trough?

By Mr. Hood: Objected to as irrelevant and immaterial and relating to matter not properly pleaded. Attention is again called to the fact that all of the testimony of this witness relating to operations of the Hough Company, so far as they bear upon any apparatus involved in this case, took place subsequent to the date of issue of the patent in suit.

A. Sheet No. 23 shows an open trough in greater detail than sheet No. 3.

Q. 27. Do you remember these various changes, or are you entirely dependent on the blue-prints for your recollection?

By Mr. Hood: Objected to as irrelevant and as relating to matters not properly pleaded.

[fol. 469] A. I remember the changes in general, but would need the blue-prints to refresh my memory on minor points.

Q. 28. Do you know who made the tracings from which these blue-prints, Exhibit 42, were reproduced?

By Mr. Hood: Objected to as irrelevant and immaterial and relating to matter not properly pleaded.

A. They were made by draftsmen in our office from data given by our chief engineer, and the tracings were checked by him, H. Hinez.

Q. 29. During this period that you were representing the Concrete Appliances Company, was your company successful financially?

By Mr. Hood: Objected to as irrelevant, immaterial, relating to matter not properly pleaded, and as assuming a fact not properly proven.

A. No, we lost considerable money on this phase of our business, owing to the amount of money that was spent for advertising for our salesmen, and owing to the fact that all the material that we rented on the first two jobs had to be entirely scrapped.

Q. 30. Aside from the swivel pan and swivel, furnished you at the very beginning, how much of this equipment, was furnished you by the Concrete Appliances Company during the remaining years?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. None.

Q. 31. Explain the renting of material referred to in an earlier answer.

By Mr. Hood: Objected to as irrelevant and immaterial, as relating to matter not properly pleaded, and as relating to operations not properly connected with any of the parties to this cause.

By Mr. Jones: Defendants' counsel is willing to stipulate that this objection may apply to any of the witness' testimony relating to the sale or rental by them of apparatus during this four-year period, in order to avoid encumbering the record with such frequent objections and to avoid the unnecessary expense of printing so many repetitions.

While counsel for plaintiffs appreciates the offer just made, he feels that he must be the judge of the manner in which proper objection to the examination of the witness shall be made of record.

A. Under our contract with the Concrete Appliances Company we were to license the use of this system on a royalty basis of so much per yard, furnishing the user with the general lay-out, and either giving him blue-prints from which he could make up his own material, or else make this material ourselves and sell or rent as we saw fit.

By Mr. Hood: The answer is objected to as not the best evidence.

Q. 32. What did you actually do towards carrying out this contract?

By Mr. Hood: Objected to as irrelevant and immaterial and relating to matter not properly pleaded.

A. We sold licenses to use the system at a royalty per yard of concrete poured, and rented all material for the use in this system, with the exception of cable, the wooden towers and the wooden boom, these last of which the user himself furnished. We did, however, give them blue-prints from which the user could build his towers and wooden booms.

[fol. 471] Q. 33. Who was the party primarily responsible for the changed apparatus represented by the revised blue-prints of Exhibit 42?

By Mr. Hood: Objected to as irrelevant and immaterial and as relating to matter not properly pleaded.

By Mr. Jones: Defendants' counsel calls the attention of the court to these repeated objections, despite the foregoing offer of stipulation.

A. The William B. Hough Company, through reports received through their men whom they had sent to the jobs in trouble, and in one or two cases from the suggestion of the user himself.

Q. 33a. Did Theodore Emtman or the Concrete Appliances Company suggest any substantial changes?

By Mr. Hood: Objected to as irrelevant and immaterial and relating to matter not properly pleaded.

A. Not that I remember.

Q. 34. Have you any photographs illustrating the apparatus used by your customers at this period?

By Mr. Hood: Objected to as irrelevant and immaterial and relating to matters not properly pleaded and to operations not connected by any proper proof to any party to this cause.

A. Yes, I have a few.

(Witness produces two photographs which are marked jointly "Defendants' Exhibit 43, Photographs of William B. Hough Co.")

By Mr. Hood: The exhibits are objected to as irrelevant, immaterial, as relating to matter not properly proven.

Q. 35. Where did you get these photographs?

Objection to Q. 34 repeated.

[fol. 472] A. I got them from among job photos of the William B. Hough Company.

Q. 36. Are they typical of any apparatus rented or licensed by you during the four-year period in question?

By Mr. Hood: Objected to as irrelevant and immaterial, and as relating to matter not properly pleaded, and as relating to operations not properly connected with any party to this cause.

A. They are typical of all installations sold, the top photograph showing the method of carrying the concrete from the main to a sub-tower, together with the method of distributing from the tower and boom; and the second photograph showing more plainly the tower and boom only, with the trough from the hopper, the swivel joint at the end of the boom, and the distributing pipe that placed the concrete.

Q. 37. In an installation of this character, what parts of the apparatus did you actually sell to the user?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. We didn't sell any of it; we merely rented, sending to the user the automatic hoist bucket, the hopper, the troughs, the necessary pipe, hopper pans, boom pans, swivel pans, all ironing for the booms and tower,—practically everything that was metal, with the exception of the steel cable used for guying the towers and suspending trough and boom. The user himself supplied all the wood necessary and built the tower and the booms.

Q. 38. How was the pipe supported which extended downwardly at an angle from the tower, as illustrated in the blue print Exhibit 42?

By Mr. Hood: Objected to as irrelevant and immaterial; as relating to matter not properly proven and not properly connected with [fol. 473] any party to this cause.

A. The trough from the tower to the end of the boom was supported between two steel cables, which were drawn taut by means of block and tackle at the tower.

Q. 39. Is this shown in Sheet 17a of this exhibit?

By Mr. Hood: Objection to answer to Q. 38 repeated.

A. Yes.

Q. 40. And before you changed from a pipe to an open trough, how was the pipe supported?

Objection to Q. 38 repeated.

A. In the same manner, though one or two users did change the method.

Q. 41. What are the inclined members extending upwardly from the boom to the pipe or chute in the photograph Exhibit 43?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. Those are props to take out the sag in the trough line, as the user evidently was not able to draw his cables taut enough to give a straight flow of concrete.

By Mr. Hood: In view of the character of the last answer, it is objected to as not the best evidence, the witness quite apparently not having personal knowledge of the particular matter inquired about.

Q. 42. Was the boom seat or swivel connection, shown on sheet 8 of Exhibit 42, secured permanently to the tower, and if not, how could its position be changed?

By Mr. Hood: Objected to as irrelevant and immaterial and relating to matter not properly proven and to apparatus not properly connected to any party to this cause.

[fol. 474] A. It was secured directly to the tower by means of bolts, and when raised had to be unbolted and raised with block and tackle in the same manner that the Ransome hopper was.

Q. 43. What objections, if any, were raised by prospective customers with reference to the use of this apparatus, the use of which you were attempting to sell them?

By Mr. Hood: Objected to as irrelevant and immaterial, as assuming efforts on the part of the witness contrary to his previous testimony, and also as relating operations subsequent to the date of the patent in suit and not properly connected with any party to this cause.

A. In our first installations we had numerous objections as to the way the apparatus worked. We later on had objections in some cases that it cost more to use this method than to use the old tower dump bucket and cart method.

By Mr. Hood: The answer of the witness is objected to as hearsay. Alleged statements by an unknown party, not parties to the record, cannot be proven by this witness.

Q. 44. Were any objections raised to the general scheme of discharging concrete through pipes or chutes?

Objected to as irrelevant, immaterial, and as calling for hearsay.

A. We did have some objections by engineers that in chuting concrete by gravity the aggregates would not remain as mixed, the heavier material or stone getting into place first. After use, in pouring concrete in this manner, however, we never had objections.

Q. 45. At the time you first represented the Ransome Company [fol. 475] in 1906, was the concrete of about the same consistency as what is used today in spouting?

A. Back in 1906 the Government used specifications which called for a very dry mix. It was later found, however, on experiment that concrete developed less cracks and greater strength by being what is now called a "sloppy mix." Specified quantities of water for given aggregates are now universally known, and is much more wet than in 1906.

Q. 46. Did any of your customers during the three or four-year period previously referred to use the apparatus shown on the top blue print of Exhibit 41, showing a mast on top of the tower and a pipe line hung by vertical supports from a downwardly sloping boom secured to the mast.

Objected to as immaterial.

A. Not to my knowledge. We never gave blue-prints showing such a rig.

Q. 47. Why did you not promote this type of apparatus?

Objected to as immaterial.

A. It was never suggested by the Concrete Appliances Company.

Q. 48. Did any of your customers ever use the apparatus of Sheet 1 of Callahan patent 948,789, which I show you?

Objected to as immaterial.

A. Not to my knowledge. What is this—a lattice boom, or what? (Witness indicates the part X.)

Q. 49. What do these circles represent in the third sheet of the blue-prints Exhibit 41?

Objected to as irrelevant, immaterial and relating to matter not [fol. 476] properly proven and not connected to any party connected with the present cause.

A. They show the radii that can be reached from the tower by the movable boom and swivel pipe therefrom, showing how all the parts that are to be concreted can be reached by the use of this system. It was used also to demonstrate to the customer the rapidity with which concrete could be poured, and the saving in labor over taking to the point of pouring by means of carts or wheelbarrows.

Q. 50. Did you ever rent or sell your customers counterbalanced chutes which were swivelled from the end of a supply chute?

Objected to as immaterial.

A. We never did.

Q. 51. In your work today in connection with metal specialties for concrete buildings, do you ever see carts of the Ransome type used?

A. Yes, frequently.

Q. 52. Was William H. Insley a competitor of yours from 1910 to 1913?

Objected to as immaterial.

A. Not in the use of this system; they were on one or two other lines that we handled.

Q. 53. What was the Insley line at that time?

Objected to as immaterial.

A. They made orange peel and clam shell buckets, carts, somewhat similar to the Ransome. These were the only things on which we came in contact with them. I do not know their full line at that time.

Q. 54. How long have the photographs, Exhibit 43, been in your files?

Objected to as irrelevant and immaterial.

[fol. 477] A. Ever since they were taken in 1911.

Further objected to as subsequent in date to the date of the patent in suit.

Q. 55. Where is Mr. Monstead, of the Monstead Company.

A. I haven't the slightest idea. We have had no dealings with the Monstead Company since 1913.

Direct examination closed.

Cross-examination by Mr. Hood without waiver of objections and without waiver of right to subsequent cross-examination, as previously noted:

X Q. 56. Do you know of your own knowledge that the Mr. Emtman, about whom you have testified, was the same man whose name appears on patent 948,723, copy of which was shown you in direct examination?

A. Yes.

X Q. 57. How do you know that?

A. Because we were told that Theodore Emtman, who was in Chicago at that time with Mr. Engstrum, was the Emtman who had taken out some patents.

In view of the last answer, the testimony of the witness attempting to connect the Emtman, known to the witness, with patent 948,723, is objected to as hearsay.

X Q. 59. Did you personally visit the Witherspoon-Englar Texas job, about which you have testified?

A. I did not. I did handle the correspondence, however, myself.

Counsel for plaintiffs moves to strike all portions of this deposition to which objections have been entered, on the grounds set forth in the objections.

Cross-examination closed.

[fol. 478] Redirect examination by Mr. Jones:

R. D. Q. 60. Where did this Mr. Emtman come from prior to the time you say he was with you in Chicago?

A. From Los Angeles.

R. D. Q. 61. About when did he come to you?

A. We saw him first in October of 1910.

R. D. Q. 62. What was the occasion of your meeting?

A. In conjunction with our taking the agency from the Concrete Appliances Company.

R. D. Q. 63. Did he represent himself as their agent in dealing with you?

Objected to as immaterial.

A. He was with Mr. Engstrum at the time, and did not take up anything with regard to the contract. He was the practical man of the outfit.

R. D. Q. 64. Who was Mr. Engstrum?

A. He was an officer in the Concrete Appliances Company.

R. D. Q. 65. What is the G-Y System you referred to?

By Mr. Hood: Objected to as irrelevant and immaterial, relating to occurrences subsequent to the date of the patent in suit, and not connected with any party to the suit, relating to matter not properly proven and not proper redirect.

A. G-Y is the trade-mark which we took out, and under which we advertised and sold licenses for the system above referred to.

Deposition closed.

Signature waived.

[fol. 479] UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF PENNSYLVANIA

In Equity. No. 2067

CONCRETE APPLIANCES COMPANY et al., a Corporation, and WILLIAM M. INSLEY, Plaintiffs,

vs.

JOHN E. GOMERY, JOHN C. SCHWARTZ, et al., Defendants

Continuation of proofs for final hearing on the part of defendants, commencing this 7th day of March, A. D. 1921, at ten (10) o'clock a. m., pursuant to notice and consent of counsel, at the offices of Westervelt & Ball, 522-525 Citizens National Bank Building, 453 South Spring street, Los Angeles, California, before Raymond S. Taylor, notary public.

Present: George P. Barton, Esq., and Everett L. Ball, for defendants. Arthur M. Hood, Esq., and C. E. Fleming, Esq., for plaintiffs.

HUGH W. BRYSON, having appeared at the request of defendants and being duly sworn in the cause in the caption stated and being examined as a witness in behalf of defendants, testifies as follows:

Direct examination by Mr. Barton:

Q. 1. Please state your name, residence and occupation.

A. Hugh W. Bryson; 601 South Kenmore; age 52; contractor; I was manager for F. O. Engstrum Company, contractors, from about 1904 until about 1916.

Q. 2. Were you, during that time, acquainted with Theodore Emt-[fol. 480] man, and if so, state what connection Mr. Emtman had, if any, with the F. O. Engstrum Company.

A. I was acquainted with Mr. Emtman during the above period. Mr. Emtman was foreman and superintendent on several buildings during the same period.

Q. 3. I show you copy of patent No. 948,723, granted February 8, 1910, to Theodore Emtman, and I call your attention particularly to the figures of the drawing: Figure No. 1 and Figure No. 2. You will note that in those drawings is shown a mast mounted to rotate on a vertical axis.

A. I recognize the mast on rotary mentioned above.

Q. 4. Did you know Mr. Emtman in the year 1906?

A. I did.

Q. 5. You may state if at or about that time he described to you any such apparatus as is shown on the drawing of his patent, which I have shown you.

A. Not at that time he did not. He being a concrete man, why, we talked in a general way many times about that time and afterwards about the feasibility of running concrete by gravity. My first impression of Mr. Emtman's conversation was how to mix, which was a very difficult feature—to keep concrete from rock by flowing by gravity. The conversation now and then continued on that line in general without speaking much of the apparatus.

Q. 6. Did you, as superintendent of the F. O. Engstrum Co., have to do with the concrete construction of the Majestic Theater in Los Angeles?

A. I did.

Q. 7. Do you remember when that was? If so, state.

A. You mean the beginning of the Majestic Theater?

Q. 8. Yes.

A. I think it was in the early part of 1907. I have a record of exactly when they began, if my particular answer does not quite [fol. 481] coincide with established records. I give the above purely from memory without records.

Q. 9. To refresh your recollection I call your attention to a certified copy of the preliminary statement of Mr. Emtman in Interference No. 30,618, involving the application upon which Emtman's patent was issued, and two other then pending applications. You will note that in that sworn statement Mr. Emtman says: "That he commenced the construction of his invention in a full-sized apparatus during the month of November, 1907, and completed it in about the latter part of December, 1907, and that said apparatus was first successfully operated during the latter part of December, 1907, or the early part of January, 1908, in Los Angeles, California." Does that statement accord with your recollection of the matter?

A. He started some buildings about that time. A great many angles in connection with gravity system, which to construct, it is necessary to begin from mixer, tower, hopper pipe and the boom. About those dates he perhaps set up a mixer and a tower on the Majestic Theater, which was part of a gravity system, to run in the basement; after the basement was placed by the wheelbarrow and cart method he raised the tower to place the concrete on the first floors or walls, or rather the walls and then the floor, which was about the 1st or 15th of December, 1907, using the wheelbarrow method up to that point. He, in connection with others of the men working on the building, including myself, talked about delivering concrete by gravity. Mr. Emtman was busy on other jobs and we followed up the development of the gravity system with Lee Callahan and others, and right there I might state that Mr. Callahan, one of our carpenter foremen, explained that he had given much thought and study to the delivering of concrete by

[fol. 482] gravity. From then on we worked in harmony to develop a gravity system for delivering concrete by gravity on the Majestic Theater. Mr. Emtman was perhaps on other jobs. However, he was subject at all times to consultation and he had instructions to develop the gravity system according to his own ideas the best he could. Mr. Callahan had the same instructions. These patents of Mr. Emtman's were applied for some time thereafter, where he had perfected a gravity system on those lines on those dates on other jobs principally the Elks Hall, Luckenbach Building and Christian Science Church, which followed simultaneously construction as the Majestic Theater proceeded. Otherwise we put him on one job, another fellow on another job and another fellow on another job.

Q. 10. I understand then that your recollection corresponds substantially with the statement of facts as sworn to by Mr. Emtman. Is this correct?

A. Well, if this is intended to say that this full system was developed at those dates why it was not intended that way. There was a lot of talking during the years Mr. Emtman has mentioned here from the different angles that is necessary to make the gravity system. One of the principal drawbacks from an engineer's standpoint was the mix of concrete to flow by gravity. The mix of concrete to flow by gravity was different than any engineers had tried before. The question in everybody's mind was whether the rock would separate from the cement or gravel, and many a conversation was had on the lines of getting a mix irrespective of apparatus, or whether it would flow by gravity or not.

Q. 11. Would you say then that the problem to be solved was as to whether the sand, the gravel, cement and water would mix when sent down by gravity rather than the problem as to the means of doing it?

[fol. 483] By Mr. Hood: The question is objected to as leading and an attempt to put desired words into the mouth of the witness.

A. The feature, so far as the mix was concerned, that was part of the whole for successful operation, and a great many authorities differed on whether it was practical or not. However, from a theoretical standpoint it seemed to pass approval. It had been experimented with several times by our organization in a limited way—as far as the mix was concerned.

Q. 12. I do not know that it appears yet upon the record, so I wish you would state your relations to the plaintiff in this suit.

A. You mean F. O. Engstrum Co.?

Q. 12a. No the Concrete Appliances Company.

A. I am a stockholder of the Concrete Appliances Co. Up to several years ago was president of same. It is a California corporation. In my official capacity I closed a contract with W. H. Insley of Indianapolis, to represent and put on the market what has since developed and is now known as the "G-Y Gravity System."

Q. 13. Prior to January, 1908, do you recall talking with Emt-

man or anyone else as to the apparatus that should be used in handling cement or mush by the gravity system?

A. Yes, previous to that time we had many conversations to develop the different angles as to what would afterwards develop gravity system. Gravity system consists of a great many old established principles, such as mixer, tower, skip, all of which had been previously used and discussed, but on account of the enormous expense of delivery of concrete we used those things above mentioned, together with labor and the cart and wheelbarrow method worked, [fol. 484] all considerably with the view of economical distribution, and in general conversations if we could eliminate a good deal of the labor which was necessary by the cart and wheelbarrow method and get the concrete to different points of the building and save a good deal of tamping, which is costly. It was an idea that a great many authorities had talked over and tried to perfect, with the view of getting a gravity system that was both practical from a delivery material standpoint and economical as to operations which after developed in stages to get up to the time the patents were applied for on several large reinforced concrete buildings.

Q. 14. Mr. Bryson, I don't think your answer is quite responsive to my question. I ask the reporter to read it to you and ask you to answer it if you can, just as it is put.

(Question read to witness.)

A. I explained to you gravity system was finally developed into what is known as gravity system, but had to take certain stages to get what is now known as gravity system and which is now perfected as gravity system. Gravity system was unknown at that particular time in its entirety.

Q. 15. My previous question would seem to call for a direct answer—that is "yes" or "no," with any explanations you might wish to make. I will repeat it.

(Question repeated to witness.)

A. Gravity system was not in existence at that time; therefore I could not tell what developed afterwards. Only some parts of it—that is now the gravity system, that we talked about.

Q. 16. I think my previous question calls properly for a "yes" or "no" answer. Can you give such an answer—"yes" or "no"? If so, please do it.

[fol. 485] By Mr. Hood: The witness is advised that it is not necessary for him to answer any question "yes" or "no" if he desires to make any explanation. He may answer the question in his own words and in his own manner.

(Question read again to witness.)

A. Well I want to answer with explanations. What is now part of the gravity system—perhaps the mixer, tower—and the feasibility of mixing concrete and running same by a pipe or a chute was discussed previous to January, 1908. The other parts of the

gravity system, such as the boom, swivel and the construction that would give us a vertical movement over a large radius was discussed with the possibility of making and completing a whole gravity system.

Q. 17. All prior to January, 1908?

A. Yes.

Q. 19. Now the fact appears that Mr. Emtman was working with you or for you at that time, and did you discuss all these things with Mr. Emtman at that time?

A. Yes, we had many conversations about that period. We had conversations about many other things.

Q. 19. And you had conversations with him about the rotating mast of his patent?

A. I don't remember that particular detail. That was not in the early stages. That developed a little while afterwards.

Q. 20. And did Mr. Emtman ever practically use on any of your work that rotating mast?

A. Yes.

Q. 21. And did he talk to you about any other way of rotating or moving the delivery pipe or pipes or chutes except by a rotary machine at any time?

A. Well, it was after that that he developed the rotary mast and perfected it. During those dates or about January, 1908, or a little [fol. 486] bit previous to that the basis of conversation was more on the construction—it was not the apparatus, realizing that a certain mix had to be secured in the event that the apparatus was finally developed and right after those dates and continuously, why Mr. Emtman was on different reinforced concrete jobs—the buildings he was foreman and superintendent on, on which he perfected a mast with a rotary movement.

Q. 22. I ask you more particularly about the rotary mast—do you remember that that specific device was used by Emtman at any time, and if so, when first?

A. As I previously explained, he was one of our superintendents and foremen and he was consulted from time to time about what afterwards developed into the gravity system, and previous to January, 1908, there was none in existence by Mr. Emtman from a practical standpoint.

Q. 23. But he talked about it with you prior to January, 1908?

A. Well, he might have—I don't remember that exactly, but we talked about the gravity system or what later developed into the gravity system in general as we came to the different necessary features to perfect it as a whole.

Q. 24. Was the rotatable mast used in connection with the cement work of the Majestic Theater?

A. Well you might term it that. It was a boom. Part of it was a boom; afterwards it developed into a more perfected boom. My recollection was a stick about 20 or 25 feet long that was so constructed that it could vertically move with the pipe quite a degree away from the tower swinging movement and the pipe was hung from a guy wire from tower, which gave it that oscillating move-

[fol. 487] ment. A very crude method of what has now developed into the gravity system and particular feature of it was developed by Mr. Callahan on that particular job. That is, it was under his supervision. He was under the working foreman on a job. It was explained to me he had had some previous experience on gravity system and was allowed to put one up there. That was in 1907 about the latter part and the first part of January, 1908, and it was continuously used and improved as we went along. We first started with a 4-inch pipe and they found that clogged; then we got a 6-inch and found that clogged; then we got an 8-inch pipe all with this little boom or pole or little arm and pipe suspended from tower by cable and swivels so as to get an oscillating vertical movement. That was very crude compared with drawings that came after, so far as a whole gravity system was concerned, which had to be developed from different angles, so we could use it from a practical standpoint.

Q. 25. Do you wish to be understood as saying that the mast was installed at the Majestic Theater prior to January, 1908?

A. It might have been the latter part of December, 1907, or it might have been the first of January, 1908—along about that time.

Q. 26. And did you talk with Mr. Emtman about it?

A. Oh, no doubt, about it in a general way. He was one of the men on our pay rolls.

Q. 27. Well, now did you or did you not?

A. I did, yes. I don't know about the mast—I don't remember about that especially, but this point of gravity system had to be developed and was one of the last parts to be developed.

Q. 28. Now, I wish you would state all that you remember of having said to anyone prior to the first of January, 1908, about the rotating mast.

[fol. 488] A. I don't remember those details. I talked to Emtman—I talked to Callahan and I talked to Fred Engstrum—talked to most anybody that I thought would be apt to be interested, from our standpoint, and did not have any one development on my mind at that time, and only took each angle up as they were developed and come to some decision. I am not a practical man myself and depended on developments from fellows like Callahan, Emtman, or anybody else that worked for us, and had given them permission to go ahead so far as expending any money was concerned. I might say this to you, that anyone that was on our payroll, before expending a dollar of our money, must have the approval by one of the officers. In this particular instance, the man on the Majestic Theater, or any other job, were under my immediate supervision.

Q. 29. And whatever development was made in apparatus, boom or masts or otherwise were made with your approval, were they not?

A. Yes.

Q. 30. And the F. O. Engstrum Co. paid for it?

A. Yes, sir.

Q. 31. And generally speaking you did not care what man did it so it was only done?

A. You are mistaken about that. I was very particular how my

money was spent and analyzed as near as I could any new developments as far as the theoretical or practical part of it was concerned, before I allowed any money to be spent. There was talk of delivering concrete by gravity and it looked to me like it was feasible and naturally I consulted authorities as best I could to see where the defects were and where the advantages were to see if we could not make a practical apparatus, all of which developed.

Q. 32. It was developed then and paid for by the F. O. Engstrum Co.?

[fol. 489] A. By the F. O. Engstrum Co. Partly developed on that job—the boom and pipes and this vertical movement to the side and extended over quite a vast area in a crude way. That particular angle was developed on the Majestic Theater job. It was perfected on the Elks Hall, Christian Science Church and the Union League Building.

Q. 33. You speak of distributing the cement over a considerable area. Did you do that by gravity prior to January, 1908?

A. It was about that time—the latter part of December, 1907, or the first of January, 1908, that we began distributing—was followed up during the life of the building.

Q. 34. Now, while I think I put this question once before, I will ask you specifically whether the distribution by gravity in any way—new or old—was done on that job prior to January 1, 1908?

A. Well, the foundations might have been poured, partly by gravity by putting a chute under the mixer; that is, below the mixer; now that is gravity, but the gravity system is different from gravity. It is a combination of putting ideas together as building goes up and distributing concrete above the mixer after it is hoisted and deposit into chute and spread over area by swivel, and by a horizontal movement, which was not done previous to December, 1907, or the first of January, 1908, by the vertical movement. It might have been put in by gravity in the basement, but when it comes to using the boom and the swivel and the pipe suspended from the tower, that has a vertical movement above the mixer, that is, the first place we used it—on the Majestic Theater—that is gravity system also.

Q. 35. Weli, you think that was prior to January, 1908?

[fol. 490] A. It was about the last of December, 1907, or the early part of January, 1908. It is established by documentary evidence, but I think my testimony, as far as dates is concerned, is correct.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 36. Mr. Bryson, when did you first meet Lee Callahan, whom you have mentioned?

By Mr. Barton: I call attention to the fact that the direct examination was confined to questions relating to the development of Theodore Emtman's invention. That whatever was said about Lee Callahan was volunteered and that the testimony now relating

to Lee Callahan called for by the question should be considered as direct testimony for the plaintiffs.

By Mr. Hood: Attention is called to the fact that the direct examination was not as limited as has been stated by counsel for the defendants, and attention is called particularly to question No. 13, in which the witness was asked as to whether prior to January, 1908, he had talked with others.

A. About the middle of December, 1907.

X Q. 37. Prior to January 1st, 1908, had you talked with Lee Callahan relative to the distribution of a mush concrete by any special apparatus?

A. I had.

X Q. 38. Under what circumstances did you first meet Lee Callahan?

A. He applied to me for a job. After analyzing his qualifications in which he explained he was a first-class mechanic, had had a good deal of experience on concrete work and had been in business for himself and was a carpenter by trade and a general all around [fol. 491] foreman, we needed such qualifications as he said that he had and at that time we were working on several buildings, and among them was the Majestic Theater on South Broadway, which had been started some time previous. After analyzing Mr. Callahan's qualifications I decided that he would be the man that we would be glad to have on our pay roll and gave him a chance.

X Q. 39. In referring to the Majestic Theater, do you mean the Majestic Theater in Los Angeles?

A. I do.

X Q. 40. Do you recall about when this conversation with Mr. Callahan took place?

A. About the middle of December, 1907.

X Q. 41. Had you ever seen Mr. Callahan before that time?

A. I had not.

X Q. 42. What was the condition of the work at the Majestic Theater building site at the time you first met Mr. Callahan?

A. Well, the foundations were in, being a reinforced concrete building; part of the framework was in and in the front part of the building some of the concrete was placed in the framework and above that there was the frame or carpenter work in and perhaps the steel was set in that frame work ready for the placing of the concrete.

X Q. 43. By framework do you mean the forms for the reception of the concrete?

A. Yes.

X Q. 44. As I understood it, this building did not have any steel frame work.

A. No.

X Q. 45. Do you recall about how high the form work was up at the time Mr. Callahan came to you?

A. Going toward the second floor in front.

[fol. 492] X Q. 46. What kind of a first floor did that building have or was it intended to have?

A. Reinforced concrete floor, balcony effect.

X Q. 47. Was it all to be on the level with the street?

A. No, the construction of the building calls for offices fronting on Broadway Street and in the rear, why, it has a dome effect, with balconies in a regular theater form and shape.

X Q. 48. Then going into the building on the street level there was to be a floor on a level with the street part way back and then a sort of an inclined step amphitheater arrangement descending toward the basement?

A. Yes, and toward the stage.

X Q. 49. Was that inclined construction concrete in place at the time Mr. Callahan came?

A. No, perhaps some of the form work. Was just beginning on that particular part of the building.

X Q. 50. Do you recall Mr. Callahan's statements to you in stating his qualifications as to their general character?

A. He explained to me that he was a carpenter foreman—that he had had many years of experience on framework, brick work and concrete work, and had had experience in handling a great many men under different plans and specifications, and that he had given a great deal of thought to the construction of concrete, all of which qualifications were in line with that particular building, and his qualifications appealed to me very strongly.

X Q. 51. What was there in his statement of qualifications which particularly appealed to you as indicating that he was probably a man that would be profitable for you to employ?

A. Well, it was several of his qualifications—his having had [fol. 493] previous experience in handling men, and having worked on reinforced concrete buildings especially appealed to me. He explained in detail several jobs that he had been on where he had placed the concrete, and at that time we were increasing our organization as fast as we could get the men, and any man that would be apt to have such qualifications would be considered for a job. He also appealed to me as a good assistant foreman. Concrete was very much in its infancy, generally speaking, at that time and when I could find a good man who had had previous experience on concrete I was very much interested in him. Other qualifications that were mentioned were that he had some thoughts of chuting concrete, all of which he explained in general detail and was very interesting, as far as coming to a conclusion as to his qualifications as to putting him on a job in charge of a gang of men.

X Q. 52. What did Mr. Callahan tell you at that time and preliminary to your employment of him relative to his ideas about chuting concrete?

A. Said he had given the subject a great deal of thought and had gone through some of the angles of the experimental features, and being a very large concrete building would like to have the opportunity of inaugurating the system he had had in mind.

X Q. 53. Did he describe that system or apparatus?

A. In a general way—said it was all in the mix and talked

considerably at length how to mix. At that particular time I had not quite satisfied myself that it was practical, and he explained that with the tower we were then using and the skip we could deliver the concrete by gravity and chute and pipe and went on to explain to me in a general way about the chute system, which was very appealing to me, and he went into a few details as to how, all of which met my approval.

[fol. 494] X Q. 54. Suppose you tell us as nearly as you can in the words of Mr. Callahan just what sort of an apparatus he proposed to use for the purpose of chuting the concrete.

A. Well, he explained that he would run some concrete, as far as the mix was concerned, in the basement where rock would not separate, and he was very positive about hoisting it—sending it down through a pipe it would not separate, so I told him to go ahead and ordered the pipe for him and anything else he wanted to let the different departments know so he could get a system according to his ideas, which he said would take a pipe and the pipe would be held up by trestles all swung from the boom—one from the tower which would hold it up; explained a half dozen different ways as far as holding the pipe in the air was concerned, and he said he could put an arm to help suspend the pipe and he said he also thought the pipe could be moved, by his explanation of suspending from the tower, by guy wires and an arm.

X Q. 55. How was this arm or boom to be supported?

A. To be supported on a tower.

X Q. 56. And how was it to be supported on the tower?

A. Well, so that it would revolve or give a vertical motion so as to get over an area of floor space—part of getting to a perfecting system.

X Q. 57. What sort of a connection was there to be between the tower or boom or arm?

A. He drew a little diagram of some kind where you could hook the boom into the tower so that it would vertically operate—not being a mechanic I don't remember the exact details of it, only that I saw very plainly it looked to me like he knew what he was talking about, and after I put him to work one of the first instructions I gave him was to go and try out his scheme and see how it would work out from a practical standpoint.

[fol. 495] X Q. 58. How did he propose to get the concrete up to this pipe?

A. Well, that was already in existence where we had a mixer and a tower and a hoist already on the job and his development came from the tower on out. We had previously used that with a wheelbarrow and cart method to do some parts of the job.

X Q. 59. What became of the concrete in the hoist when it was raised in the tower?

A. It was dumped into a hopper and from the hopper Callahan developed a kind of a crude pan effect where he had kind of a nail in the center of it where it would revolve around and on that he hung some 4-inch pipe and the pipe was supported by wire from the tower. A day or so after that he put an arm to help

to hold up the pipe which revolved around with the pipe when you went to swing it from right to left.

X Q. 60. Did he describe this sort of construction before you hired him?

A. In a general way.

X Q. 61. Now prior to your meeting with Mr. Callahan about the middle of December, 1907, had Mr. Emtman ever described an apparatus of this kind, which was to include a swinging arm and chute pipe suspended from the tower?

A. No.

X Q. 62. You hired Mr. Callahan then after he had told you about what he thought he could do?

A. Yes.

X Q. 63. About when was that that you hired him?

A. Some time right close to the middle of December—right after the middle of December, 1907.

X Q. 64. And when did Mr. Callahan go to work for you?

A. The day after Christmas in 1907.

[fol. 496] X Q. 65. What did Mr. Callahan do then?

A. I put him in charge of certain form work which was previously described with a great many men under him. Told him to get busy on perfecting his system of delivering concrete, which he did immediately thereafter.

X Q. 66. Suppose you describe the complete apparatus that Callahan built.

A. Right at the beginning or that he made use of on this Majestic Theater job?

X Q. 67. That was used on the Majestic Theater.

A. He made use of a mixer, a tower, a skip, a hopper. Leading from the hopper was kind of an ill-shaped pan effect—from my recollection 4 inches deep, with a hole in the middle where he put a nail or screw of some kind so as to give it a vertical motion; from that he had a 4-inch pipe supported to the tower and his hopper and pan, as described, was also supported on the tower and the pipe was held up by a $\frac{1}{2}$ -inch wire rope or cable.

X Q. 68. Where was this wire rope or cable fastened?

A. Fastened on top of tower or somewhere near it.

X Q. 69. What do you mean by vertical motion of the pan?

A. I used vertical when I meant horizontal—it was a swinging motion I am trying to describe from side to side.

X Q. 70. Was there anything in the hopper or in connection with the hopper to make it possible to control the flow of concrete from the hopper to this pan?

A. Yes, a small gate, and it was possible to dump the hopper full of concrete and have a gate that let it out as it was needed at the other end of the pipe and controlled by a man in the tower.

X Q. 71. Was this pipe that led from the pan in one piece or what was it?

[fol. 497] A. Started in one piece, added pieces to it with a shovel as the work progressed.

X Q. 72. What was the condition of the work at the Majestic Theater building at the time this special apparatus was first completed and ready to handle concrete?

A. Well, the foundation was in all around the building. The first floor from the Broadway side—I mean the first walls—was poured and also placed—rather in concrete, and the framework on the Broadway side was going up toward the second and including the second story, as far as the front of the building was concerned. The rear building began on framework and took up to the next stopping point—from a carpenter's standpoint—when this idea was first started the steel was placed in those forms which I have mentioned and that was where the pouring began.

X Q. 73. Was concrete poured?

A. It was poured at that time.

X Q. 74. How did the apparatus work?

A. Had a great deal of difficulty. The pipe was too small and would get clogged and then we knew when we tried it we did not quite understand how to work it out and had to take the pipe down and knock the clog out and put it back again, and came to the conclusion the pipe was too small and got another pipe. The next thing we tried a 6-inch pipe on the same principles that we tried the 4-inch pipe. That worked considerably better; however, there was some clogs and finally, after a few days, we got an 8-inch pipe and we found the 8-inch pipe had less clogs, and, therefore, more economical in construction than either the 4-inch or 6-inch pipe.

X Q. 75. Now I understood you to say at the beginning the first section of pipe leading from the pan under the hopper was supported at its outer lower end by means of a cable which led back [fol. 498] to a higher point on the tower; is that right?

A. Yes.

X Q. 76. Did that apparatus work successfully so far as swinging the pipe from side to side was concerned?

A. It did.

X Q. 77. And did the concrete flow from the hopper into the pan and from the pan into the pipe no matter what the angular position of the pipe was?

A. It was and it did.

X Q. 78. About how soon did Mr. Callahan put up this supporting arm or boom you talked about?

A. About four or five days after he first put up the pipe.

X Q. 79. Well, how was that secured on the tower?

A. It was secured on the tower with perhaps a block—I am not mechanic enough to explain exactly the details of how the arm was secured on the tower, but it was so constructed that it would move horizontally.

X Q. 80. You mean swing from side to side?

A. I mean swing from side to side.

X Q. 81. How was this arm or boom supported at its outer end?

A. Tied to the pipe by a wire following the pipe movement wherever it might be vertically moved.

X Q. 82. Was this arm above or below the pipe?

A. Below the pipe.

X Q. 83. And inclined upwardly and outwardly so as to connect with the pipe?

A. Yes.

X Q. 84. Sort of a brace that would swing with the pipe?

A. Yes.

X Q. 85. Well after that arm or boom was put in place, was the apparatus used then?

[fol. 499] A. It was continuously used from that on and improved as fast as we could improve it as to the delivery of concrete, but it had to be joined by other pipe on swivels so as to deliver the concrete to different parts of the building.

X Q. 86. At the time this boom was put in place and into use, had the height of the building progressed beyond the level of the second floor?

A. I think it had. I am not positive on that particular point, but I remember them putting it in a few days after he fastened the pipe to the tower.

X Q. 87. When they first started the use of this special apparatus, about how high up from the ground was the hopper?

A. I judge about 30, 35 or 40 feet.

X Q. 88. When the work had progressed to a point approximating the second floor, what was done with the apparatus then?

A. Why the tower was raised and the guides for the skip were raised with it and the whole apparatus—that is, the pipes—were raised consistent with the next floor; they wanted to pour concrete after raising of it all.

X Q. 89. What became of the hopper?

A. The hopper had to be raised—otherwise could not have poured.

X Q. 90. How about the boom?

A. It would simultaneously go up with the tower making the necessary connections and continued on those lines as needed during the construction of the building.

X Q. 91. How high a building?

A. Eight stories and basement.

X Q. 92. And was this special apparatus used throughout the construction of the building from the time of its first operation until its completion of the concreting of the building?

[fol. 500] A. It was continuously used on that building from then on only in an improved state as far as delivery of the concrete was concerned and more perfected in its system.

X Q. 93. From the time the boom was installed until the end of the operations, was that boom kept in place with the chute and tower and raised from time to time?

A. From time to time and whenever it was needed. We always kept that as a fundamental part of gravity system. However, though, you know that a boom was a stick that afterwards developed into a boom 20 or 25 feet long.

X Q. 94. That building is still standing, isn't it?

A. It is.

X Q. 95. The concrete work has passed satisfactory inspection and the building was accepted by the city?

A. By the city, architect, engineer, owner and contractors.

X Q. 96. Before that apparatus was installed by Mr. Callahan, what did you have to do with the concrete after you had carried it to any particular point with the wheelbarrow?

A. The system then generally established was to make your forms and place the concrete in those forms to be dumped from a hopper into wheelbarrows and carted around after putting planks all over the building so that a wheelbarrow could reach a given point, and it was customary in Los Angeles and this vicinity to use Mexican laborers to roll the wheelbarrows—take and get a wheelbarrow from a hopper and roll it to a given point under the illustration of foreman and dump it wherever it was dumped; it was customary to have a lot of men tamp so as to give a homogeneous mass.

X Q. 97. After this special apparatus of Callahan's was installed, did you have to tamp the concrete?

[fol. 501] A. Not very much, eliminated 90 per cent. of expense in tamping.

X Q. 98. Your attention has been called to a certain patent No. 948,723, issued on the application of Theodore Emtman. Your particular attention has been called in direct examination to the mast No. 16, which is pivotally mounted on top of the tower. Had Mr. Emtman ever described to you such an apparatus, including this tower or any other means for supporting and swinging a chute from the tower prior to the time Mr. Callahan came to you in the middle of December, 1907?

A. He had not.

X Q. 98a. Did Mr. Emtman ever describe such an apparatus prior to the time the Callahan apparatus had been built and put into use at the Majestic Theater building early in January, 1908?

A. No.

X Q. 99. Do you recall approximately the time when this Callahan apparatus was first used to pour concrete on the Majestic Theater job?

A. The latter part of December, 1907, or the first part of January, 1908.

X Q. 100. That is, within a few days after Callahan went to work on December 26, 1907?

A. Almost immediately. That particular time the tower, skip and mixer was there—simply a question of adding to the tower a kind of a pipe and seeing that the right kind of mix went through the pipe.

X Q. 101. By the way, where was the mixer?

A. Mixer was about the middle of building south side of Majestic Theater.

X Q. 102. Was it at the ground level—above or below the ground level?

A. In the ground a little bit.

X Q. 103. At the foot of the tower?

[fol. 502] A. Yes.

X Q. 104. Did Callahan stay in the employ of the F. O. Engstrum Co. during this entire operation on the Majestic job?

A. No, he did not, he was continuously with us on the Majestic Theater for about six months, possibly seven. Then we took him off and put him in charge of another job we had gotten in San Diego.

X Q. 105. Was this a reinforced concrete job?

A. It was. It was known as the Timken Building.

X Q. 106. Did he use any special apparatus down there?

A. Yes, he used gravity system in a more completed state on that job right from the beginning.

X Q. 107. And did that Timken job have a tower and a hopper?

A. A tower, hopper, mixer, pan, chute, pipe and what might be termed an arm or boom.

X Q. 108. And how was that arm or boom supported?

A. Supported on the tower just like the other. Pipe was supported on tower by cable.

X Q. 109. And how was the chute supported?

A. On the tower.

X Q. 110. And was it connected with the boom in any way?

A. Yes, it was. I think it had the boom in this particular instance; in fact, I almost know it was the boom which was above the pipe and the pipe was suspended from the tower and the boom both, but they both had the vertical motion—I mean the horizontal motion.

X Q. 111. You mean it had a swinging motion from side to side?

A. Swinging motion from left to right and covered a given area.

X Q. 112. And was that apparatus used throughout the entire [fol. 503] construction operation of this Timken Building?

A. Yes.

X Q. 113. Now do you recall about when it was, if after that, that Emtman described to you the special apparatus shown in his patent in which there was to be this pivotal mast mounted at the top of the tower?

A. I think it was on the Elks Hall, which is on Third and Clay Streets, Los Angeles, or perhaps the Luckenbach Building, which is on South Hill Street, below Third, Los Angeles, or it might have possibly been the Union League Building, which is on Second and Hill Streets, Los Angeles, all of which are reinforced concrete buildings, and on which Emtman was the foreman.

X Q. 114. When were these three buildings under process of construction?

A. I think the latter part of 1908, 1909 and 1910.

X Q. 115. And Emtman actually made an apparatus like that shown in patent and used it on one of those buildings?

A. Fundamentally.

X Q. 116. Now that mast had to be supported at its upper ends by guy lines, which were led off to some exterior points away from the tower?

A. Yes.

X Q. 117. It required quite a bit of ground boom?

A. It did and quite a good deal of cable.

X Q. 118. How long did Callahan stay in the employ of the F. O. Engstrum Co. approximately?

A. Eight or ten years.

X Q. 119. During that time, did he make use of the apparatus as you have described and similar to the Majestic Theater job and Timken Building apparatus, on other buildings?

A. Yes, the same system was used on all concrete buildings of any [fol. 504] magnitude that we got contracts for in the future, and anyone that Callahan was on he would try to improve his system as much as he could and any of those Emtman was on he would try to improve his system as much as he could, working from two different angles.

X Q. 120. Then in those devices that were used on the buildings Callahan worked on, did they continue to have this swinging pipe and a swinging boom that assisted in supporting the outer end of first pipe section?

A. It did continuously.

X Q. 121. Did this device operate satisfactorily?

A. Absolutely. Very economical in operation. Cut the cost down 300 or 400 per cent., as far as delivering the concrete was concerned.

X Q. 122. Prior to the time you say Callahan told you about his ideas and about the middle of December, 1907, had anybody else ever described to you an apparatus which was to handle mush concrete and which was to comprise a tower, a hoist bucket or skip or boom, a mixer at base of tower to deliver concrete into bucket, a hopper mounted at an elevated point on the tower and provided with a control gate and arranged so it could be raised from time to time as the building progressed; a horizontal boom mounted on the tower in such a way that it could be raised from time to time as the building progressed and a chute section supported by the boom and so connected to the hopper that the boom and chute could be swung from side to side and yet the hopper would at all times deliver concrete to the chute?

A. No one had.

X Q. 123. Now in these various Callahan devices which were used, were the hopper and boom and chute raised from time to time as the building progressed?

A. It was.

[fol. 505] X Q. 124. About how many reinforced concrete buildings were erected with the assistance of this Callahan apparatus—say during the period from the time of the Majestic Theater building until, say, through 1911?

A. In this vicinity?

X Q. 125. Yes.

A. Well, he went from the Majestic Theater Building in August, 1908, to the Timken Building in San Diego, which was a large reinforced concrete office building, and after that Callahan went to the Marston Building in San Diego, which is a large reinforced department store building and after that I think he came back here

and we put him on a reinforced concrete building known as the engine house down on Winston Street. There may be one or two other buildings of similar construction he was on that I don't recall now in that particular period, but we recognized him and he proved a first class reinforced concreter foreman, and we put him on concrete buildings where we had him available.

X Q. 126. And during that same period, about how many buildings were erected with the assistance of an apparatus like that shown in the Emtman patent, where a mast and connected boom were pivotally mounted at the top of tower and the mast was supported at its upper end leading off by guy wires to its exterior supports?

A. I recall the Elks Hall, 3rd and Clay Streets, Los Angeles; the Luckenback Building, Hill Street, north of Third, Los Angeles; Christian Science Church, Pasadena. Those are the jobs Mr. Emtman was on. We had other foremen at that time on other concrete jobs using practically the same system, as far as the skip, tower, hopper, boom and the pipe swinging vertically was concerned. Kubach & Co. used a system of that kind on the car barns for the Los Angeles [fol. 506] Railway Co., Pre-Cooling Plant at San Bernardino; also one at Colton for the account of the Santa Fe Road, and a number of other smaller jobs about that time.

X Q. 127. During the years 1908, '09, '10 and 1911 about how many buildings were erected under the authorization of your Company, in which there was used a tower, overhead bucket vertically adjusted hopper, vertically adjusted boom—and by vertically adjustable I mean capable of being shifted on the tower from time to time to new positions as the work progressed—and the chute supported by the boom and connected with the hopper in such a way as to receive the concrete from the hopper no matter what position the chute might occupy in connection with its possible swinging from side to side?

A. How many buildings, you want to know?

X Q. 128. Yes.

A. I would have to go to some records to get that—could get it, I presume. I know of five of ten millions' worth, as far as value is concerned; as far as number, besides those previously mentioned, there were many others; in fact I have concrete buildings that contained only 200 or 300 yards; we used the gravity system on them from the beginning of the Majestic Theater operations.

X Q. 129. Most of the buildings were buildings of a good many stories in height and considerable ground area, were they not?

A. Yes, the largest buildings in Southern California—the Engstrum Apartments, about 8 or 10 stories reinforced concrete; the Rex-Arms, about 9 or 10 stories reinforced concrete; the Rampart Apartments; the Bryson, 10 stories reinforced concrete; Citizens Bank and Trust Co., 8 stories reinforced concrete, Pasadena; Citizens National Bank Building (which is this building); Clarke [fol. 507] Hotel—at least 75 or 100 of them could be established if I could go to my records.

X Q. 130. In connection with all of those buildings that you have mentioned, did they use an apparatus, which included the swinging

boom supporting the chute where the boom was pivoted on the tower, or did they use in connection with some of those buildings the Emtman type, where the swinging boom was carried by the pivoted mast, which was mounted on top of the tower and guided by guy lines to exterior supports?

A. Some of the buildings were constructed under one system and some under another as far as separating the two systems is concerned. All those buildings Emtman was on as a superintendent or foreman were practically using his system. Those Callahan was on used practically his system.

X Q. 131. About how many buildings did Emtman directly superintend?

A. 40 or 50—maybe 60 or 70—a great many of them—that is, large buildings.

X Q. 132. Do you mean by that out of the 75 the Emtman type of construction was used on 60 or 70 and only the remaining 15 or 5 utilized the Callahan type of structure?

A. I think it was a little bit greater proportion than that—about two-thirds of Emtman's system and about one-third of the Callahan system—that is, after both systems were perfected.

X Q. 133. Now, was Emtman in direct and immediate charge of the building operations at the Majestic Theater, or was Callahan?

A. Mr. Emtman was in charge directly of it. He was a man we used as a general utility man, a man we consulted frequently on mechanical operations and our plan was to keep him as free as we [fol. 508] could from any one particular job; except where necessary to put him on a job we were organized to such an extent that we could call him off that job if needed. Mr. Callahan might be termed a sub-foreman on the job; he had other foremen over him.

X Q. 134. Did Mr. Callahan work directly under your orders?

A. Worked according to plans and specifications as far as the construction of the building was concerned, and anything needed in the way of material or men or the general supervision of the business outside of the mechanical part of it, he was under my direct orders.

X Q. 135. This special apparatus which you say he produced was produced by him under your direct permission?

A. I gave him permission to do it.

X Q. 136. And Mr. Emtman on his jobs which he directly superintended produced his special apparatus under your permission?

A. Yes.

X Q. 137. How often were you on the Majestic Theater job?

A. Practically every day—part of the time every day.

X Q. 138. And you visited all these other various jobs you mentioned from time to time, did you?

A. Nearly every day. I made it a point to go to every job every day, check up the men, see that material was there and give any general instructions which might be out of the line of the fundamental construction, that any foreman might have when he first took hold of the job.

Cross-examination closed.

[fol. 509] Redirect examination by Mr. Barton:

R. D. Q. 139. When did your company first consider securing patent protection upon the Emtman-Callahan and the Smith devices?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. Don't remember the exact dates. Emtman and Callahan were on the pay roll and Callahan's and Emtman's ideas were developed at our expense and we organized a Concrete Appliance Co. to take over these patents after they were granted.

R. D. Q. 140. When first did you consider that question?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. I don't remember the dates.

R. D. Q. 141. It appears that all the three applications were filed in the Patent Office early in the year 1909. How long prior to January, 1909, do you recall speaking with either one of the gentlemen about their applying for patents and assigning the patents when procured to your company?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. Emtman's patent was applied for through Lyon & Hackley, patent attorneys of Los Angeles, and I paid the necessary fees and attorney's fees at the time. Callahan's patent was afterwards purchased from Mr. Callahan for a consideration, but with it he recognized our right to it on account of developing it on our jobs and in co-operation with his ideas, and we secured by purchase Mr. Callahan's patents.

R. D. Q. 142. More than one patent on this structure?

[fol. 510] By Mr. Hood: Objected to as irrelevant and immaterial.

A. I don't think there was but one patent.

R. D. Q. 143. You mean of Mr. Callahan?

A. Yes.

R. D. Q. 144. Did you ever know of Callahan making any other invention than this?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. Yes, he made one or two other inventions.

R. D. Q. 145. In this line?

A. Something to do with concrete construction. I don't know just what they were, but know he had one or two patents.

R. D. Q. 146. State, if you are willing, how much you paid Callahan for this.

By Mr. Hood: Objected to as irrelevant and immaterial. The witness is instructed that he need not answer unless he so desires.

R. D. Q. 147. Is Callahan financially interested in your Company now?

A. He is not.

R. D. Q. 148. Was he ever?

A. No, not since the purchase of the patents.

R. D. Q. 149. Did you agree with Emtman or with Callahan that they should assign any inventions they made to you at any time prior to January, 1909?

A. No, we did not have any understanding with them. Just simply took what was in evidence; that is, as a basis for Concrete Appliances Co. I presume your record shows Callahan and Emtman and Mr. Smith got into an interference.

[fol. 511] Recross-examination by Mr. Hood:

R. X. Q. 150. Did Mr. Callahan ever have any financial interest or stock holding interest in the Concrete Appliances Co.?

A. He did not.

Met pursuant to agreement at 2 o'clock p. m.

Same counsel present.

Further examination of the witness Bryson by Mr. Barton:

R. D. Q. 151. Were photographs taken of the work at the Majestic Theater as the work progressed?

A. No, not in its entirety. I have a few photographs taken of the building and some parts of the operation of pouring the concrete.

R. D. Q. 152. Are you willing to produce them? If so, please do so.

The witness here produced four photographs and hands them to counsel for defendants. The four photographs are offered in evidence and the photographs of the Majestic Theater Building job are marked Defendant's Exhibits 44-A, 44-B, 44-C and 44-D.

R. D. Q. 153. Do you know the dates when these photographs were taken?

A. I do not.

R. D. Q. 154. Were other photographs taken while that work progressed?

A. Not to my knowledge.

R. D. Q. 155. State if any of these show anything about the means of pouring concrete by gravity?

A. The pipe is in evidence on Exhibit 44-A—both on the floor where indicated and then there was a pipe overhead, showing the free end with a couple of men at the end. Exhibit 44-C shows [fol. 512] several men using pipe and the pipe overhead leading down where it is being used for delivering concrete—free end held by one or two men. All of this was on the Majestic Theater and part of the balcony construction. Exhibit 44-D shows the front of the Majestic Theater on the Broadway side after building is up two stories and the suggestion of a tower on the south side of the building under course of being raised. Some of these photographs indicate that some of the pouring had been done when that picture was taken.

R. D. Q. 156. You don't know the date even approximately of these photographs being taken?

A. About February or March of 1908—maybe the latter part of January, 1908—perhaps the middle of January, 1908.

R. D. Q. 157. Might they have been taken in April, 1908?

A. They might have been, but I hardly think so. My recollection of it is that we got about that far into the construction about that time—January, February or March of 1908.

R. D. Q. 158. What concrete work did Callahan tell you he had superintended at the time he applied for work with you?

A. Don't think there was any in Los Angeles. He mentioned some foundation work in Denver and Colorado Springs, where he said he had had previous experience. Most of his experience had been on brick work and carpenter work. My recollection is he told me he had had some experience in both Colorado Springs and Denver.

R. D. Q. 159. Did he tell you that he had had previous work in connection with a gravity system?

A. No. Nothing in a gravity system as a whole. He said he [fol. 513] had tried or experimented on the mixture of concrete and he said that he had mixed some and put it in a basement by a wooden trough.

R. D. Q. 160. He said nothing to you then about a tower in that conversation?

A. Yes, and when I analyzed his qualifications he explained in a general way the idea that afterwards developed into the gravity system as a whole, by claiming that he had overcome the defects of the mixture of concrete by chuting it down a wooden trough into the basement. He also explained that he was very anxious to get on a large concrete building so that he could develop some ideas of his that he had in perfecting what afterwards developed into the gravity system, by raising the tower and the boom and a swivel and a pipe hung to the tower that had a vertical movement all of which was very interesting because it was a new idea. That, in connection with his other qualifications, which I explained, I immediately offered him a job as sub-foreman on a large concrete building, with the understanding I would let him carry out the ideas he had explained to me for the delivering of concrete by what afterwards developed into gravity system.

R. D. Q. 161. You talked with Emtman about a gravity system you say prior to January, 1908?

A. No, not about a gravity system in its entirety—some parts which afterwards developed what now is the gravity system. In the way of details I had many conversations with Emtman.

R. D. Q. 162. Did you talk with him about a guy wire?

A. I did not.

R. D. Q. 163. Did you talk with him about a tower?

A. No.

R. D. Q. 164. Did you talk with Callahan about a guy wire?

A. No, I don't think I did.

[fol. 514] R. D. Q. 165. Did you talk with Callahan about a tower?

A. I don't remember doing so. Mr. Callahan explained to me that he was going to chute concrete by gravity from a tower. The tower was an old idea of construction work and a great many people did use it and it was an accepted piece of apparatus that on many occasions was in vogue, as far as concrete construction work was concerned.

R. D. Q. 166. You have said that the talks were general. Now, did you have any talks that were specific with either Emtman or Callahan where they named parts rather than stating results that they proposed to accomplish?

A. When Mr. Callahan applied to me for a position he went over in a general way what he intended to do in detail, and it all sounded reasonable enough to try, and that included everything that we had there and anything we might add to, to get certain results. As far as Emtman was concerned, most of my conversations with him were to get a mixture of concrete that would flow by gravity where the rocks would not separate from the cement, sand and gravel, and it was the mixture Mr. Emtman and I had most of our conversations on previous to these dates of 1907.

R. D. Q. 167. Do you mean 1907?

A. Previous to December, 1907, or January, 1908—when the gravity system was first used on the Majestic Theater by Mr. Callahan. Mr. Emtman was our superintendent and foreman on a great many jobs and was a thorough mechanic and we consulted him a great many times from many angles on a great many jobs, and, as I stated a minute ago, as far as the mixture of concrete was concerned, was what Mr. Emtman was trying to work out more than anything else, as far as any special details were concerned, according to my recollection.

[fol. 515] By Mr. Barton: Please repeat to the witness the previous question.

(Question repeated.)

A. Mr. Callahan, when he applied for the position, explained in detail what afterwards developed into a whole gravity system. Any conversation I have had with Mr. Emtman was based more on the mix and not the apparatus of what afterwards developed into the gravity system as a whole. When I say gravity system as a whole, I mean a complete gravity system.

R. D. Q. 168. Now state specifically any parts of the structure which Mr. Callahan mentioned to you at that time.

A. Well I have explained about a pipe and a boom supported by the tower that would develop into a vertical movement. I asked him the possible expense of inaugurating such a system, and, after discussing that, found out it was nominal compared with what we had already had on the job, which was a tower, skip and mixer,

and I gave him instructions to develop any ideas he might have from a practical standpoint.

R. D. Q. 169. Did he mention guy ropes or wire to hold the pipe?

A. Don't remember that. Just presumed he had to hold pipe up on the tower with some method, and when it was developed it proved to be a wire or cable.

R. D. Q. 170. Did he use the word "boom" to you at that time?

A. I don't think he did. He said arm, or stick or support.

R. D. Q. 171. Are you sure he used the word "stick"?

A. He might have.

R. D. Q. 172. Are you sure?

A. No, I am not.

R. D. Q. 173. Or did he use the word "arm"?

[fol. 516] A. I am quite sure he used either one of these words—either "arm" or "stick" or "timber." He might have used the word "boom," but my recollection is he used those other words, as I have previously expressed.

R. D. Q. 174. Was Mr. Emtman present at the conversation?

A. No, he was not.

R. D. Q. 175. Who was besides yourself, if anyone?

A. Don't think anybody was present at that time besides Callahan and myself. When I analyzed a man for a position I treated it in the nature of a personal matter—didn't think it was necessary to have anyone present. In fact, when anyone was present under conditions of that kind, I made it a point to talk to a man by himself.

R. D. Q. 176. Were the distributing gravity pipes supported at any time on that job by guy wires or ropes from the tower?

A. Was the pipes supported from the tower by ropes or guys?
Yes.

R. D. Q. 177. Were they supported at any time on trestles or carpenter horses?

A. Yes, some parts of it. Presuming you wanted to pour a building 100 feet in length and you had 75 feet of pipe, these pipes generally came in lengths from 10 to 20 feet and you would have to put horses under some part of it which was a part nearest the floor where it was convenient, but never under the first one or two chutes. That was always supported either by stick, arm or boom with guy wire from the tower. Some parts of the pipe were even supported by men holding it up on their shoulders. That was near the free end or spout where you were going to deliver it. Some of it was hung over part of the structure work. If a long length of pipe was bought you could take it and put swivels from [fol. 517] two or three different lengths so as to give you the vertical movement at the free end, also deliver it in the place where it is desired from time to time without moving all the pipe. I should have said horizontal swinging movement instead of vertical. I get the two terms mixed.

R. D. Q. 178. You have described difficulties you had in making the mush flow through the pipe. You said you finally substituted

an 8-inch pipe for the smaller pipes. Can you tell when you substituted the 8-inch pipe for the smaller pipe?

A. We started with a 4-inch pipe on the Majestic Theater building and found it was too small because it clogged. Within not more than two or three days we had made and on the job a 6-inch pipe, which gave us better results, as far as clogging was concerned. It was about two weeks before we discarded that and had the 8-inch pipe. I judge from the use of the 4-inch till we got the 8-inch pipe it was less than four weeks.

That is all.

Recross-examination by Mr. Hood:

R. X. Q. 179. In Question No. 25 you were asked as to whether you wished to be understood as saying that the mast—that is, the particular mast shown in the Emtman patent—was installed at the Majestic Theater prior to January, 1908, and your answer is not entirely clear. Will you please state whether or not, in answering Question No. 25, you had in mind that the question referred to the particular obstruction which you had just described in your answer to Question No. 24?

By Mr. Barton: This question is objected to as improper. The witness has made a statement that is perfectly clear, and in the [fol. 518] question he has been virtually directed by his counsel to modify it. It is quite improper.

A. In my answer I had in mind the previous question. I got the mast confused with Callahan's arm or boom. Wish to also state that a great many authorities have different names for different parts of different apparatus. It is very difficult for me to be technical on something new.

By Mr. Barton:

R. D. Q. 180. Did you see the work as it progressed on the Timken Building in San Diego?

A. I did. Not as often as I inspected the work in Los Angeles because it was out of town, but every three or four weeks, perhaps every month or two months, I would be in San Diego for the inspection of any jobs we had under operation.

Deposition closed.

Hugh W. Bryson.

Wednesday, March 9, 1921.

Met pursuant to adjournment at 9:30 o'clock a. m.
Same counsel present.

L. A. PARKER, the next witness called in behalf of the defendants, having been duly sworn, testifies in response to questions of counsel as follows:

Direct examination by Mr. Barton:

Q. 181. Please state your name, age, residence and occupation.
A. L. A. Parker; age 38; residence, 460 Witmer Street, Los Angeles; occupation, architect and engineer.

Q. 182. I show you photographs marked Exhibits 44-A, 44-B, 44-C and 44-D. Please state if you know what they represent and who took them, if you know.

[fol. 519] A. Progress photographs which I took during the construction of the Majestic Theater.

Q. 183. Did you take other progress photographs of that job?

A. Yes, sir—took them along as the building progressed.

Q. 184. And have you the plates? If not, state what you did with them.

A. I have them, although I don't know whether I can lay my hands on them right now. I was recently burned out and don't know whether I can weed them out of the shuffle. They can be had.

Q. 185. Are you able to fix the dates of the taking of these several photographs?

A. Well, I can by referring to our records; that is the only way.

Q. 186. What was your work in connection with the Majestic Theater?

A. I had complete charge, as far as—well in the first capacity I was associated with Mr. Mayberry as engineer on the building for the architect and then after the construction work started we were employed by the Hamburger Realty & Trust Co. as their superintendents, and in the division of our work in the office I had charge of all the outside work while my partner had the inside. Of course, that put me in absolute authority as far as the supervision of the work was concerned and looking after the interests of our clients.

Q. 187. It appears in other testimony that the F. O. Engstrum Co. were the contractors. Also that Mr. Theodore Emtman had something to do with that work. Do you remember meeting Mr. Emtman in connection with that job?

A. Yes, of course, Mr. Emtman was the general superintendent [fol. 520] of the job. He was down there on the work off and on until later when they put him on another job where he was in charge continuously.

Q. 188. You may state what, if anything, these photograph exhibits I have shown you disclose with respect to distributing cement.

A. Well, of course, two of them actually show the distributing of the concrete, and the other one shows the concrete completed, and this one—Exhibit 44-D—well, that just shows the building with the 4th floor poured.

Q. 189. Do you see in that Exhibit 44-D any tower for raising cement?

A. Yes, it looks as if part of that is a tower, because it shows some of the steel work of the columns on the south side of the building; therefore, it must be the tower.

Q. 190. I understand that you are not able to fix the exact date of the taking of these photographs, except by reference to your records?

A. That is the only way I could fix them exactly. If I could get our superintendent's reports, I could give them positively, but I do not know that those are available.

Q. 191. State, if you remember, the name of the general foreman who was on that job.

A. George Eberhard. George was not there at the very first, but came about the time the first floor was started, as I remember.

Q. 192. Do you know where he is now?

A. No, I don't, haven't seen him for five or six years—maybe longer.

Q. 193. You will produce the memorandum or refer to it and later inform counsel as to the results, I understand?

A. That is, if I can produce it. Here is the point—Mayberry [fol. 521] handled all the clerical end of our business. Now, I haven't—to my knowledge—those records at all. If I can get the information from Mr. Mayberry, I will produce it.

Direct examination closed.

Cross-examination by Mr. Hood:

X Q. 194. You stated in direct examination that other progress photographs were taken of the Majestic job. Did any of the negatives, other than those of Exhibits 44-A, 44-B, 44-C, and 44-D that were printed, show the particular apparatus, which was used to pour the concrete?

A. No others that I could find, but I do know there were some others taken.

X Q. 195. But so far as you know those others did not show in any greater detail than those which you have produced, the particular apparatus which was used for pouring the concrete?

A. I do know I took some up on the 6th, 7th and 8th floors, but for some reason or other haven't been able to find those. Of course they would show much more than these.

X Q. 196. You have made a search for those photographs of the 6th, 7th and 8th floors' progress, and have not been able to find them?

A. Yes.

X Q. 197. In your direct examination you were asked about the apparatus which was used in handling or placing the concrete. Will you describe as nearly as you can the character of that apparatus used—say, in placing the concrete for the inclined auditorium floor?

A. That is, it was used here and throughout the rest of the building? (Witness points to the Exhibits 44-A, 44-B, 44-C and [fol. 522] 44-D.) You mean to start at the beginning so far as the actual pouring of the concrete was concerned after it was mixed?

X Q. 198. Yes.

A. The concrete is dumped from the mixer into a concrete hoist, which runs up the tower to hopper and then from the hopper into a receiving chamber or device, that, in turn, spouts it into the pipe.

X Q. 199. In your last answer you have used the present tense. Were you intending to describe the apparatus that was actually used on the Majestic Building?

A. Well, in that I merely enumerated in sequence how concrete travels from the mixer to the pipe. Well, I can put it in the past tense and say it did.

X Q. 200. Well, that is the kind of construction that was used on the Majestic job?

A. Yes, sir.

X Q. 201. Do you remember how the pipe, that you have referred to, was supported?

A. Well, at the tower it was supported one way and at the distributing end it was supported differently. At the tower it was supported by their block and tackle and rope they used to pull lumber up, and of course they used their wire, that they tie forms with. I can't remember that particular point, but I know that was the general method by which it was supported. Then the pipe, after of course it got past the span from the tower to the balcony and had a chance to support it further it might have been on a brace down on to the concrete, or it might have been a 2x4 nailed across a couple of posts that would be present, and in that way it carries it to the end where it would be on either a movable device or a permanent one, in order to swing the pipe and distribute the concrete into the forms.

X Q. 202. Now in that apparatus there was a mixer that was [fol. 523] placed in a pit in the ground so the top of the mixer was about even with the ground so that it could dump the concrete into the hopper.

A. This mixer was probably on top of the ground on that particular job, although that is immaterial; it depends upon the lay of the land. My recollection is the mixer was on top of the ground and the hopper was in a pit,

X Q. 203. What do you mean by the hopper—the hoist bucket?

A. A skip, I should say.

X Q. 204. And that skip was arranged in a hoisting tower along side of building?

A. Used to know the name of skip—seems to me it was the Raymond skip—that steel bucket anyway.

X Q. 205. When they built the tower to get ready to use this pipe system they carried it up considerably higher than the usual practice for carrying a tower, where they simply used it to hoist and deliver into wheelbarrows?

A. That was always the case. A tower was always carried quite a little in advance of the story they were operating on.

X Q. 206. On that particular tower, when they got ready to use this pipe, they set the hopper very much higher than was usual for the wheelbarrow method, didn't they?

A. Naturally, yes, sir.

X Q. 207. And that hopper had a control gate at its distributing mouth?

A. Yes, sir, a regulation gate.

X Q. 208. Then, as I understand it, there was a device—what you called a swinging device on the tower—in position to receive the discharge from the hopper?

A. You say swinging device?

X Q. 209. Yes.

[fol. 524] It was fastened to the end of the pipe. They were collapsible pipes that were used and this one in which the concrete was received from the hopper was open on the top with the end of it slipped into the pipe.

X Q. 210. It was a sort of a pan-like affair, was it?

A. Pan—that is what it was.

X Q. 211. And that was mounted on a vertical pivot of some kind so it could swing in a horizontal plane?

A. I don't remember how it was mounted, but, of course, it would have to swing. The concrete going on one side of the building at one time and then you would have to move it over to the other. Of course, it does swing in that sense of the word.

X Q. 212. Well, it actually did swing, didn't it?

A. Oh, yes.

X Q. 213. Well, then, that pan-like affair had its discharge in pipe form and that was sleeved into some more pipe sections?

A. Yes, sir.

X Q. 214. And the lower end of that second pipe section, that was sleeved over the pan spout, was supported by a block and tackle or guy wire that was fastened to the lower end of pipe and carried back to the higher point on the tower, wasn't it?

A. Yes, sir; I don't just remember whether it was the lower end. It was all open space out in front of tower to balcony, and in coming that far it would be supported by maybe one or two, I don't really remember.

X Q. 215. About how long was that space it had to bridge over to get to balcony—just approximately?

A. I am trying to think between which columns it was set. Those columns were about 20 feet on centers; that means it might be 30 feet, or if it was between the second or third columns it would be about 30 feet. I will tell you the balcony came in between the [fol. 525] first and second of those large ones at the end, so it might not be more than 20 feet, although, as I said before, it might be as much as 30 feet.

X Q. 216. Then at the lower end of that pipe section that was supported by this guy wire, there was another pipe section swivelled to the first pipe section so it could swing around horizontally, the vertical axis being at the lower end of the pipe section supported to guy wire? Is that your recollection?

A. They probably used a couple of elbows. I do not remember the exact details. My recollection is they used two elbows, one on the upper pipe and then had the other to come out at whichever

angle they wanted it to with the second pipe; that is, provided they were not spouting right, and if they were spouting at that location, as on photograph, simply one elbow and then down.

X Q. 217. It is your recollection that that apparatus, when it was once installed, was used continuously during the rest of the operations on that building, and practically all the concrete was poured through those pipes?

A. It did not work quite as successfully as that, as we had trouble at first on the size of the pipe, but in principle—yes.

X Q. 218. They did chute quite a bit of concrete through the first pipe used, didn't they?

A. The very first pipe demonstrated immediately it was too small, but it was only a case of a couple of days' time when they could have some more made, and when they used the larger size it seemed to be satisfactory.

X Q. 219. When they used the larger size pipe it worked all right?

A. Then it was all right.

[fol. 526] X Q. 220. Now, do you recall that shortly after they began using that apparatus they found it necessary to put a brace from the tower out to the lower end of that first pipe section?

A. A brace from the tower out to the pipe section?

X Q. 221. Yes. That is, a brace that was pivoted to the tower at a point below this receiving pan quite a distance and then projecting outwardly and upwardly and secured at its outer upper end to the outer lower end to the pipe that was suspended by a guy wire from the top of the tower?

A. Why, I know that that method was used.

X Q. 222. It was used on the Majestic Theater job, was it?

A. I can't state absolutely, positively, that it was used right then at this particular time, although I know specifically, though, there was a similar device that the pipe was carried on.

X Q. 223. Do you mean on the Majestic job?

A. Yes, on some of these longer spans, and when it was necessary for a man to climb out on the pipe to knock the concrete loose, which was the only means by which it could be supported.

X Q. 224. You mean there was some kind of a pivoted boom arrangement that helped to support the pipe?

A. Yes, it moves with the pipe.

X Q. 225. What is your recollection as to the approximate time when they first began to pour concrete through this pipe system at the Majestic Theater?

A. Well, as I said in the beginning, I would have to refer to our records for that. I don't care to approximate as it is too long ago, without referring to my records.

X Q. 226. The use of this apparatus with its swinging pipe supported by the tower throughout the rest of the construction of [fol. 527] the Majestic Theater Building produced an entirely satisfactory concrete building?

A. Very much beyond my expectations, because I was really very reluctant as to its use in the first place. I was afraid of it. I was

afraid of it because I did not think we could control the mixing of the concrete. I was afraid they would have to mix too wet in order to have it flow through the pipes, and in making it this way I knew by experience it would separate, and, of course, that is a very important point of concrete; that the rock, sand and cement shall not separate, but, to our satisfaction, we found out that, if the concrete was too lean—that is, not enough cement—it would not flow, so that was an inspector, in a way, to keep the contractor from skinning the job, and also, when it was properly mixed—that is, the right consistency—it would flow the best through the pipe, so that if the contractor wanted to use the system he knew it would have to be exactly mixed to give the best results in the structure, and he had the use of the system besides, so it worked pretty good on both sides.

X Q. 227. Do you recall that there was on that job a man by the name of Lee Callahan, who seemed to have quite a bit to do with this chuting apparatus?

A. Well, as far as quite a lot to do, I don't remember that. Lee Callahan was one of the straw bosses.

X Q. 228. In this photograph, Exhibit 44-D, the part which you think is part of the tower is about the center of the picture at the top?

(Shows Exhibit 44-D to witness.)

A. Yes, sir.

X Q. 229. That looks to me as though it were in process of construction and being raised to a higher point. What is your idea about it?

A. That is very evident. Simply because the posts are at different [fol. 528] heights and you can see a board across there, which might be the temporary platform for the continuing up of the construction.

X Q. 230. Then the appearance of this photograph Exhibit 44-D and the fact that no hopper on swinging pipe or guy line are shown, would not justify the inference that the apparatus which you have described was not used on this building, would it?

A. No, it showed that it was.

X Q. 231. I understood you to state that one of these photographs "showed the concrete completed." Which photograph was that?

A. It was 44-B. That is the statement I made, and I really referred to 44-B. That is incorrect because the steel is already there; it is completed as far as cantilevers are concerned.

X Q. 232. Was any of the concrete of this building in place prior to the time they began to use this pipe and chute system?

A. Oh, yes, sir.

X Q. 233. And how had that been placed?

A. That was placed with wheelbarrows and runways and the regular customary chute for chuting it into the walls. You see there was very little floor until you got up to this point—mostly walls.

X Q. 234. And that had been tamped in place?

A. Well, yes, it was tamped with the chute, as a matter of fact, but it had been delivered in wheelbarrows and runways.

X Q. 235. But when you got to using this pipe method you did not have to do nearly as much tamping?

A. No, because it had to be properly mixed before you could put into place and it eliminated that additional tamping or puddling, rather, in mixing it.

X Q. 236. This chute arrangement, which you describe, was put [fol. 529] into use in the beginning of the placing of the concrete for the inclined auditorium part of the first floor, and about the time when some of the forms at the front of the building had been carried up to about the second floor level, wasn't it?

A. No. I don't remember. As a matter of fact I don't think the gravity system was used on the first floor at all.

X Q. 237. You are not prepared to say it was not?

A. I know when I was looking through the plates to select these I did have a photograph of the first floor, but there was nothing on that plate which showed any of the gravity system; for that reason, I did not pick it out, so I doubt if it was actually used on the first floor.

X Q. 238. But you are not prepared to say it was not?

A. No, but to my best recollection it was not. It was simply from there up that it was.

X Q. 239. You found that the use of this new apparatus, which you have described, made quite a saving in the cost of placing concrete, did you?

A. Yes, sir. I think, if I am not mistaken, I gave the Engstrum Co. a letter at one time highly approving it.

X Q. 240. You found at that time that there was a decided improvement over the wheelbarrow method?

A. I did, because we got a much better mix and my interest was that of my clients, no matter what the job was—naturally.

X Q. 241. It is your opinion, by the use of that apparatus, they produce a better building?

A. Better building at less expense to the contractor, in which case everyone was benefited.

[fol. 530]

Los Angeles, California, March 10, 1921.

Met pursuant to adjournment.

Same counsel present.

The examination of the witness Parker continued.

Redirect examination by Mr. Barton:

R. D. Q. 242. Have you consulted any memoranda since your last examination, by which you can fix more definitely the progress of the work upon the Majestic Theater Building? If so, produce such memorandum for inspection, if you please.

A. I have, and will produce our original bookkeeping records of payments from the Hamburger Realty & Trust Co.

R. D. Q. 243. Refreshing your recollection by reference to that

memorandum, which you hold in your hands, will you state as nearly as you can the progress of that work?

A. Well, we have a charge against the Hamburger Co. of \$50.00 for supervision for one-half month up to September 30, 1907, which shows that they started to run concrete as early as the middle of September, because in our arrangement with the Hamburger people we were to go on the job as soon as they started to run concrete, but, of course, they had done the excavating and some form work previous to that time.

R. D. Q. 244. Please go on and state further advances that were made in that work.

A. Well, then, during the month of October, we put in our continuous services and in November one-half month and December two-thirds of a month and then full time after that until the end of July.

R. D. Q. 245. What was the reason for your not making a charge for all of November?

[fol. 531] A. They ceased our services.

R. D. Q. 246. And was the reason stated for stopping your services?

A. Yes, sir. Up to that time the work had gone along so nicely, that they assumed that the job would take care of itself, and they could save our expenses; that is, the expense of our services on the job, so, as we were the engineers on the building employed by Edelman & Barnett, the architects, but which employment did not include any supervision as it had been previously arranged that the Hamburger Realty & Trust Co. would pay the supervision, and on that agreement we started the middle of September until the middle of November.

R. D. Q. 247. Will you state whether you were at that time meeting the foreman George Eberhard and Mr. Bryson, who is present here, and Mr. Emtman?

A. Of course, Mr. Emtman was the foreman on the job, and on my instructions went to him and, of course, my discussions were with him as to the interpretation of the drawings, as far as Mr. Emtman is concerned, I don't remember any particular conversation, although I know that he was on the job, because he was the general superintendent and naturally would be there. As far as Mr. Bryson is concerned, it was just "good morning," but no discussion as to policies, that I can remember, were ever taken up with him. Of course, he was one of the heads of the firm, but he, in turn, put the responsibility on the foreman that he put on the work.

R. D. Q. 248. And what discussion, if any, was had with respect to pouring the cement by gravity?

A. You mean at the time?

R. D. Q. 249. Yes.

A. I really don't know that there was any; at the time we were [fol. 532] having other difficulties with the Hamburger Co., and I doubt very much whether the question of pouring came up while we were then in litigation with the Hamburger people.

R. D. Q. 250. And when did it come up?

A. I think it came up very shortly after we were put back on the work.

R. D. Q. 251. What was that date?

A. Approximately the 10th of December.

R. D. Q. 252. Was it discussed then with Eberhard?

A. Yes, sir.

R. D. Q. 253. And was Emtman present or looking after the job?

A. He might have been, but I don't remember definitely, except right at the very first, but I don't think Eberhard was there exactly at the start, although he might have been.

Recross-examination by Mr. Hood:

R. X Q. 254. Mr. Parker, you stated that you "started to run concrete" in September, 1907. You meant by that term, did you, that you started to place the concrete by the wheelbarrow method, which you have previously described?

A. Yes, sir.

R. X Q. 255. Now, do you recall definitely any conversations with anybody on that job prior to, say a week before Christmas, 1907, where any particular apparatus was discussed as intended to be used to pour concrete through chutes or pipes?

A. Let's see—a week before Christmas—that would be about the 18th, that would be practically a week after we resumed work there. Well, I would imagine offhand, that the discussion came in about that time—that is, after the 10th.

[fol. 533] R. X Q. 256. That is, there was some discussion as to a possible desirability of pouring concrete?

A. They put the proposition up to us and it looked pretty good, but we did not give them absolute authority to go ahead. It was a case of trying it out or showing us it would produce before they got our final sanction.

R. X Q. 257. Did Mr. Bryson put the matter up to you?

A. I don't remember that he did personally, or who it was offhand. I would assume it would be Eberhard, as he was the man we looked to for such things. It was put up to us by someone from the Engstrum organization.

R. X Q. 258. Now, having refreshed your memory from this record, what can you say as to the probable time when the apparatus, which included the tower, the skip, the hopper, the revolving pan and the 4-inch pipe connected to the pan and suspended from the tower by the block and tackle, was first erected and an attempt made to use it?

A. Well, I know that it was used on the balcony first and, of course, the walls directly under it, and it was at the time they were getting ready or were ready for the operation of putting up the forms for this balcony, that our little misunderstanding with the Hamburger Co. came up, when we wrote them the letter that we would not be responsible for the engineering. As that was the most difficult piece of concrete engineering and construction

that had been attempted, it was at that time the longest cantilever that had ever been built in reinforced concrete, and we felt the responsibility as engineers naturally, and we insisted that we have the supervision for it; therefore, they were starting the form work about the middle of November 1907, for that, or the form work [fol. 534] might have been possibly in, but I know the concrete wasn't poured then. After we resumed operations around the 10th of December, it would take at least two weeks, if not more, to get ready to run that balcony, although the second floor in the south part of the building was already run at that time. They could not possibly have started running concrete before the last week of December, and it might have been the first week of January, but I don't think it could have been the last week because that kind of work goes a little slow, being a new type of construction.

R. X Q. 259. Well now, when you have talked about "running" concrete prior to Christmas of 1907, you mean placing it with wheelbarrows?

A. I am quite positive there was no gravity system used before Christmas.

R. X Q. 260. And then the gravity system was used very shortly after Christmas?

A. As soon as the form work in the steel could be placed for that balcony; then it was used.

R. X Q. 261. Either the last week in 1907 or the first week in 1908?

A. Yes.

R. X Q. 262. You don't recall ever having received from Mr. Emtman any specific instructions as to the building of an apparatus, including this pipe system for running the concrete, do you?

A. Not as coming from Mr. Emtman. I did, of course, coming from the Engstrum Co., but as to the individual, it is too long ago to remember that detail.

Recross-examination closed.

By Mr. Barton:

R. D. Q. 263. The forms that were in place in November were utilized for pouring later by gravity?

[fol. 535] A. You say the ones that were in place in November?

R. D. Q. 264. That you had placed in November?

A. Were anticipated, you mean, to have been poured by gravity?

R. D. Q. 265. I will put the question again. In November, 1907, you say certain forms had been installed for receiving the cement. Those same forms, I take it, were left there and they were filled by the use of the gravity apparatus that was subsequently improvised. Is that correct?

A. If they were the form for the balcony, yes, but I am not positive, as I stated in the first place, that the balcony forms were already up, or whether they were about to put the form work in,

when we were called off, but, of course, they were working continuously on the building while we were off, but no concrete run during that period.

R. D. Q. 266. Did you have a conversation with Fred Engstrum about this matter?

A. I don't remember exactly, except I was on the job when the gravity system was used. Fred's father, in fact, the whole Engstrum force, were naturally interested in the new device, and they were all there to see the first chute.

By Mr. Hood:

R. X Q. 267. Do you recall when the elder Mr. Engstrum died?

A. Yes, sir.

R. X Q. 268. Please state it.

A. About the 16th of June, 1920, as I am informed.

Deposition closed.

Signature waived.

Notary's certificate waived.

By Mr. Barton: Counsel for defendants states that he had arranged to have Mr. Harrison Albright as a witness on the morning [fol. 536] of the 8th inst. I would say that inquiring at his office that morning and at his residence, he was informed that Mr. Albright had gone to San Diego; that he would be back last evening. This morning on inquiry, he has been informed that Mr. Albright is still in San Diego, but expected back this evening. That he is informed that Mr. Albright was the architect of the Timken Building in San Diego, on which counsel infers from Mr. Callahan's preliminary statement he based his claim of having reduced the invention of the patent in suit to practice in the fall of 1908. That he will be ready to call Mr. Albright just as soon as he returns. Mr. Albright stated that he would appear without subpoena, and it is believed he will do so. Counsel for defendants has no objections to counseled for plaintiffs proceeding at the present time with any proofs he may have.

By Mr. Hood: It having been an agreement between counsel for plaintiffs and Mr. Jones of counsel for defendants that counsel for plaintiffs would adduce by deposition proofs relative to Callahan's operations in California during the years of 1907 and 1908, by way of deposition immediately following depositions to be adduced on behalf of defendants in California, providing defendants adduced all of the testimony which they proposed to adduce by deposition prior to deposition on behalf of plaintiffs, counsel for plaintiffs asks counsel for defendants whether he has any other depositions to adduce as primary proofs for defendants.

By Mr. Barton: As at present advised, no—except Mr. Albright, and possibly some testimony in surrebuttal.

By Mr. Hood: In view of the above statement, counsel for plain-[fol. 537] tiffs states that he will offer every possible co-operation in obtaining the deposition of Mr. Albright, but that, in view of

the very considerable waste of time during this week, waiting for witnesses for defendants, he feels that he cannot stay over in Los Angeles beyond the close of depositions to be taken on behalf of plaintiffs, immediately.

Counsel for defendants is hereby notified, in accordance with notice previously given to the principal counsel for defendants, that Lee Callahan will be examined as a witness on behalf of plaintiffs at the offices of Frederick L. Lyons, 312 Stock Exchange Building, Los Angeles, California, beginning at 9:30 a. m. tomorrow, Friday March 11, 1921. In addition to Mr. Callahan, the following witnesses will also be called and examined: Edward Anderson, 1114 North Hoover Street, Los Angeles, California; Hooper O. Anderson, 4447½ South Hope Street, Los Angeles, California.

Chicago, Ill., Saturday, April 2, 1921.

Met pursuant to notice at 10 o'clock a. m.

Present: Arthur M. Hood, and George Bayard Jones.

ARTHUR H. BANNISTER, a witness produced on behalf of defendants, being duly sworn, testified as follows:

By Mr. Hood: Counsel for plaintiffs objects to the examination of this witness, except in surrebuttal, on the ground that the time within which it was agreed that depositions on behalf of defendants might be adduced has expired, and in accordance with said agreement plaintiffs have begun the taking of depositions in rebuttal. Further depositions on behalf of defendants in direct defense are [fol. 538] therefore improper without special permission of the court or without consent of plaintiffs.

Examination by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Arthur H. Bannister; age, 44; residence, 6000 South Park Avenue, Chicago, Illinois; salesman for the Brownell Improvement Company, Chicago.

Q. 2. What is the nature of your work?

A. Soliciting orders for crushed stone to be used in highway and building construction.

Q. 3. How long have you been with this company?

A. I started to work for this company in 1902.

Q. 4. What work were you engaged in in 1909?

By Mr. Hood: Objected to as immaterial, as being subsequent to the date of the application upon which the patent in suit is based. Also objected to for the reasons set forth in the objection stated at the beginning of this deposition, and it is understood that such objection may be considered, without repetition, as entered to every question answered not surrebuttal.

A. In the spring and summer of 1909, in the construction of the Pennsylvania R. R. track elevation at Grand Crossing, Illinois.

In October, November and December in the construction of the Lake Shore & Michigan Southern Railway, Dock No. 2, at Ashtabula, Ohio.

Q. 5. If this Ashtabula dock involved the use of concrete, please describe the apparatus which you used in placing the concrete.

By Mr. Hood: Objected to as immaterial on the ground that it relates to apparatus and occurrences subsequent to the date of [fol.539] the application upon which the patent in suit is based. It is understood that the above objection may be considered as entered wherever applicable throughout this entire deposition.

A. In starting this contract, I had four railway car mixers; two of them discharging the concrete into wheelbarrows or carts in front of the mixer; two of the concrete mixers were equipped with rubber belt conveyers, which would carry the concrete away from the mixer a distance of 35 feet. This method was satisfactory for foundations, but when we started the construction of the walls we found that we had to have some contrivance to get the concrete up; so I had one of the mixers with the belt conveyer elevating the belt as high as was practicable, so that the concrete wouldn't run back, and from there on to the top of the wall I conveyed the concrete in wheelbarrows by building a scaffold. This was an expensive method of operation and I asked permission of my company to let me construct a tower on the end of the mixer car, directly above the mixer. I secured a mortar bucket and placed a pair of leads on the outside of the tower to act as a guide for the bucket. In this way I was able to elevate the concrete up to a receiving hopper and from this hopper I had a chute which went out to the top of the wall.

Q. 6. Have you any photographs of this apparatus?

A. I have.

By Mr. Jones: Witness produces three photographs which are marked for identification Defendants' Exhibit 50, Photographs A, B, C, Ashtabula Dock Photographs.

By Mr. Hood: The photographs are objected to as irrelevant, immaterial, not properly proven, and improperly presented.

[fol. 540] Q. 7. Is the belt conveyer you referred to shown in these photographs?

A. They are. In 50-A this conveyer is shown on the left-hand side of the picture.

Q. 8. How long had you been using a concrete distributing device of this character?

A. Since 1903.

Q. 9. I call your attention to a photograph on page 149 in the Engineering News of Feb. 28, 1901, and will ask you to compare the apparatus illustrated and described therein with the apparatus shown in part on the left-hand side of this photograph you have just referred to.

By Mr. Hood: Objected to as referring to a publication not properly pleaded.

A. Our mixer machine was of the same make as picture shown in the cut from Engineering News of Feb. 28, 1901.

Q. 10. Describe a little more fully how your device operated, beginning with the sand, stone and cement.

A. The sand, stone and cement was conveyed from the material cars to the mixer in wheelbarrows; after concrete was mixed in the mixer, it was dumped into a concrete hoist bucket and hoisted to the ceiling hopper in the tower, and from there conveyed by means of a chute to its resting place.

Q. 11. Please describe the earlier apparatus which you say is of the same make as that in the Engineering News referred to.

A. The stone, sand and cement are conveyed from the material car to the mixer in wheelbarrows and deposited in the mixer. After the concrete has been mixed, it is discharged into the rubber belt conveyer, which conveys the finished product to its resting place.

[fol. 541] By Mr. Jones: This photograph of the Engineering News will be found with a number of others and named and offered in evidence at a later date.

Q. 12. Please read the marked portion of the description and state to what extent it describes the apparatus which you used at Ashtabula.

By Mr. Hood: Objected to as referring to a publication not properly pleaded.

A. It was the same method used by me at Ashtabula.

Q. 13. The question related to apparatus, not methods.

By Mr. Hood: Objection repeated.

A. It was the same make of apparatus I used.

Q. 14. To what extent were the details the same?

By Mr. Hood: Objection repeated.

A. The mixing and conveying of the concrete.

Q. 15. This description refers to a boom. Did your apparatus have a boom?

By Mr. Hood: Question objected to as leading, and as relating to a publication not properly pleaded.

A. The boom referred to in this article is the same as I used, but I never called it a boom—called it a belt conveyer.

Q. 16. How did the mounting of your boom or belt conveyer compare with the marked description?

By Mr. Hood: Last objection repeated.

A. Same construction.

Q. 17. Explain more fully the objection to this boom conveyer

in your use of it at Ashtabula, with reference to the concrete running back.

A. The Ashtabula Harbor contract called for wet concrete, and this conveyer type of mixer was intended for a dry mixed concrete. The conveyer could not be elevated very high or the concrete would run back.

[fol. 542] Q. 18. How long a period had you been using dry concrete before this date?

A. Almost entirely up to that time.

Q. 19. During the period from 1902 to 1909, what kind of concrete had you seen used on these boom conveyers?

A. Mostly dry concrete.

Q. 19a. How did it happen that this particular job called for wet concrete, in Ashtabula?

By Mr. Hood: Objected to as relating to matters subsequent to the date of the application upon which the patent is based. Objected to further as incompetent.

A. It was so specified by the engineering department of the railroad.

Q. 20. Have you any idea why these specifications were different from the usual specifications relating to your work?

By Mr. Hood: Objected to as incompetent.

A. There had always been a difference of opinion amongst engineers as to which was the best type of concrete, a dry or a wet mix, and about this time a great number of the large railroads had changed their specifications from dry concrete to wet.

Q. 21. Was there any discussion of this subject?

A. Yes, at engineering society meetings and most all of the technical journals of that time contained articles for and against the different types of concrete.

Q. 22. Please read your answer to Q. 10 and describe any details of your apparatus not mentioned in your answer.

A. There is one word wrong; that ought to be receiving hopper instead of "ceiling hopper."

Q. 23. Please read the question.

A. I think everything has been given unless you wish to ask [fol. 543] some questions about the construction of this car.

Q. 24. You have made no mention of the member projecting to the right at the top of the tower; what is this?

By Mr. Hood: Objected to as leading and as immaterial.

A. It is what I call a boom, and it is placed there to help support the concrete chute.

Q. 25. Describe the manner in which it is secured to the tower.

A. On the opposite side from the chute in the tower this boom is bolted at one end; on the chute side of the tower there is placed under the boom a carpenter's dolly. This gives the boom a chance to move back and forth easily, as it rides on this dolly.

Q. 26. How many bolts were there in the boom?

A. One at the back of the boom, two bolts running from the timber dolly up through the boom to hold the dolly secure to the boom stick.

Q. 27. Describe more fully the operation when the dolly ran back and forth.

A. Whenever we wanted to move the chute sideways, it being supported by the boom, it made it move back and forth easily on account of this dolly arrangement.

Q. 28. What effect did the bolt at the back of the boom have on this back and forth movement?

A. It held the boom in place.

Q. 29. Can't you describe the character of the movement a little more fully. For instance, how could the boom move back and forth if it was bolted in place?

A. The nut on the bolt wasn't tightened up tight.

Q. 30. Describe more in detail the back and forth movement of the outer end of the boom and the inner end of the boom.

A. The outer end of the boom could move each way as far as the [fol. 544] tower timbers would permit it. The end of the boom where the bolt was remained in place.

Q. 31. Then the outer end of the boom moved in an arc of a circle about the bolt as a pivot; is that correct?

A. That is.

Q. 32. What is a carpenter's dolly?

A. It consists of a roller, an axle, a timber platform above the roller supported by brackets from the axle, and is used in handling heavy timbers.

Q. 33. Is it a sort of little carriage?

A. That's it.

Q. 34. Please describe more in detail how the chute was supported.

By Mr. Hood: The question is objected to as immaterial. Attention is again called to the fact that the apparatus under discussion was not produced until—certainly not earlier than October, 1909, nine months or more after the date of the application upon which the patent in suit is based. Counsel for plaintiffs protests against the encumbering of the record with evidence of this character, especially at this late stage, contrary to agreement, in violation of the Equity Rules and without permission of the court.

By Mr. Jones: While defendants' counsel presented his evidence prior to the California depositions, he stated that in taking the California testimony last, in order to avoid more than one trip to the Coast, he did not intend to bar himself from presenting such further testimony as might be based on new developments, and the present testimony, and the William G. Fargo testimony, concerning which notice has been given, came to light about the time the California depositions were being taken. Although requested by defendants' [fol. 545] counsel in a formal motion, the court declined to set dates for the taking of testimony by depositions, although consenting to depositions.

A. At the tower end of the chute said chute was held in place by a bolt through the floor of the chute into one of the tower timbers; the center of the chute was supported by a cable from the boom.

Q. 35. Through how much of an angle could the boom swing?

A. I don't know the angle, but it swung enough to deposit the concrete in a 50-foot section on one side of this mixer car.

Q. 36. After one section was finished, what would you do next?

A. We would have our steam locomotive push the mixer train, including the mixer car, ahead to the next 50-foot section.

Q. 37. How was the hoist bucket arranged on the tower?

A. The hoist bucket was placed in a pair of timber leads on the outside of the tower in front of the mixer.

Q. 38. Who was responsible for the design or arrangement of this complete apparatus?

A. Myself, with the help of my foreman.

Q. 39. About when did this apparatus first go into use?

A. About the latter part of October, 1909.

Q. 40. Prior to this time had you ever seen concrete apparatus comprising a chute hung from a boom on a tower and receiving concrete from an elevated hopper?

A. I had not.

Q. 41. This idea was original with you, was it?

A. It was.

Q. 42. How do you fix the date you have just given?

A. By our contract—our signed contract with the Lake Shore [fol. 546] & Michigan Railway, and by post cards and letter received. The contract was entered into on the 18th day of September, 1909, between the Lake Shore & Michigan Southern Railway and the Brownell Improvement Company. (Witness examines contract) Contract is signed by Mr. D. C. Moon, General Manager of the Lake Shore & Michigan Southern Railroad, and by W. L. Hodgkins, Vice President of the Brownell Improvement Company.

Q. 43. Is Mr. Hodgkins at the office this morning?

A. He was not at the office up to the time I left at 9 o'clock. (Witness telephones his offices.) He is not at his office today.

By Mr. Jones: This contract is submitted to Mr. Hood for inspection.

Witness produces a letter postmarked November 16, 1909, Chicago, Illinois, and a post card postmarked Ashtabula, October 22, 1909. This letter and card I will mark Defendants' Exhibit 51, Bannister Correspondence.

Q. 44. State the circumstances attending the mailing of these papers.

By Mr. Hood: The question is objected to as relating to matters wholly irrelevant and immaterial, and, so far as the letter is concerned, as incompetent on the ground that this witness cannot have personal knowledge as to the mailing of a letter addressed to him.

A. We were making good progress on our contract and I suppose that our vice president wished to express his appreciation of the progress is why I received the letter from him dated November 16, 1909. It is as follows:

[fol. 547] "Mr. A. H. Bannister, Supt., Ashtabula, Ohio.

"DEAR SIR: I note with pleasure your reports of the 12th and 13th and wish to congratulate you on same.

"Very truly yours, Brownell Improvement Company. W. L. Hodgkins, Vice Pres."

By Mr. Hood: Objected to as irrelevant and immaterial.

Q. 45. More specifically, to what work did the congratulations relate?

By Mr. Hood: Last objection is repeated.

A. It covered the whole field.

Q. 46. What was the occasion for the congratulations?

Mr. Hood: Last objection repeated.

A. One of the reasons was the rapid progress we were making with the tower mixer.

Q. 47. Where has this letter been since you received it?

A. I have kept it with my personal letters.

Q. 48. Where did you get the three photographs which you produced as exhibits?

A. Some one on the work at Ashtabula Harbor had these pictures taken and I secured these copies, as a number of the workmen had cameras and had taken pictures of all the different machines.

Q. 49. About how long have you had these pictures?

A. Since receiving them in 1909.

Q. 50. Please answer the earlier question relating to the post card in Exhibit 51.

A. On October 22, 1909, I wrote and mailed the post card picture to Mr. Harry Walker, 7544 South Chicago Avenue, Grand Crossing, Illinois; said post card shows the ore machines placed on the concrete docks that we constructed the year before, 1908.

[fol. 548] Q. 51. Have you used any apparatus like that shown in the Ashtabula photographs since the completion of that work?

A. Yes, on most all of our construction contracts after that time.

Q. 52. Can you produce any further illustrations of your subsequent apparatus?

By Mr. Hood: Objected to as irrelevant and immaterial.

A. Yes, there is a photograph of our tower mixer in the Engineering News of August 12, 1915, page 316.

Q. 53. Are you the A. H. Bannister referred to on page 317 of that article?

A. I am.

This copy of the Engineering News of August 12, 1915, is marked for identification Defendants' Exhibit 52.

By Mr. Hood: The exhibit is objected to as irrelevant and immaterial and useless encumbering of the record.

By Mr. Jones: We rely also on other articles in this copy relating to the chuting of concrete, including the editorial on page 321. Also pages 289, 306, 316 and 318.

By Mr. Hood: The date of the publication being August 12, 1915, long subsequent to the issue of the patent in suit, it is clearly incompetent.

Q. 54. Are you the A. H. Bannister whose name is given as the designer of a concrete spade, on page 336 of this magazine?

A. I am.

Q. 55. Did you apply for a patent on your tower apparatus of Exhibit 50?

A. I did not.

[fol. 549] By Mr. Hood: Objected to as irrelevant and immaterial.

Q. 56. Why not?

A. I did not consider it as much worth, as at that time I only intended to use it on that particular contract.

Q. 57. Of what material were the chutes made on this Ashtabula job?

A. They were made out of lumber lined with sheet iron.

Q. 58. Have you ever used any other kind of chutes?

A. Yes, steel chutes and grain bucket chutes.

Q. 59. Explain the grain bucket chutes.

A. In grain elevators they have a flexible bucket chute which conveys the grain to both ends of a box car. This gave us the idea that we could use the same kind of a chute to convey concrete in foundation work, as we could move it around, it was flexible; and as the work progressed coming up a section could be taken off at a time.

Q. 60. Explain, for the benefit of the court, what the word "bucket" means and what these sections look like.

A. Why I call them a bucket chute is on account of—they are in two-foot sections in length, round-shaped like a bucket, large at one end and smaller at the other; each one fitting into the other one; and held in place by a chain on the outside.

Q. 61. And were these grain pipe sections successful for the distribution of concrete?

A. In foundation work, yes.

Q. 62. Did you try them on any work other than foundation work?

A. I did not.

Direct examination closed.

By Mr. Hood: Counsel for plaintiffs moves to strike the entire [fol. 550] deposition on the ground that it is wholly irrelevant and immaterial, relating, as it does, to matters wholly subsequent to the

date of the application upon which the patent in suit is based, and being in no part surrebuttal, and without the consent of the court or consent of plaintiffs.

Counsel for plaintiffs further moves that defendants be required to pay to plaintiffs the entire costs involved in attendance at this session, owing to the character of the deposition.

Cross-examination by Mr. Hood without waiver of objections:

X Q. 63. What was your position with the Brownell Company during the year 1909?

A. Superintendent of construction.

X Q. 64. What experience had you had prior to 1909, which in your opinion qualified you to fill the position of superintendent of construction?

A. I had been superintendent of construction for the Brownell Improvement Company from 1903.

X Q. 65. And what experience had you had prior to 1903 which qualified you to act as superintendent of construction?

A. I had done material work for three railroads previous to that time, handling construction materials.

X Q. 66. How large a concern was the Brownell Company in 1909; what sort of business did they do and what was the extent of their business?

A. Our construction work consisted of the elevation of railroad tracks in cities; our principal contracts were the elevating of the Pennsylvania Railroad in the City of Chicago, from 22nd St. to 102nd St.; the elevation of the Lake Shore & Michigan Southern tracks in the City of Chicago from 69th St. to 102nd St.; these two elevations include the Grand Crossing layout, which includes the [fol. 551] elevation of the N. Y. C. & St. L. Railway. We also elevated the two miles of the C. & P. Ry. in Cleveland, Ohio. Also elevated the Santa Fe's, C. & A.'s and M. C. Ry.'s elevation in Joliet, Ill., and the construction of Dock No. 1 at Ashtabula, Ohio, in 1908.

X Q. 67. Briefly stated, what were your duties during the years 1903 to 1909, inclusive, as superintendent of construction?

A. I had full charge of the supervision and executing of the contracts under which my Company contracted to perform.

X Q. 68. You determined the character of apparatus and equipment which was to be used on each job, did you?

A. I used what equipment we had available, and if I needed any other equipment which we did not have I secured same by asking the office for their permission.

X Q. 69. You were the responsible head in the actual construction work, were you not?

A. Of my contract; there was a general superintendent who supervised all of the company's contracts.

X Q. 70. You mean by your last answer that you were the responsible head of the construction on the particular contracts of which you were given charge?

A. Yes.

X Q. 71. I suppose that required practically daily supervision by you of the progressing work, the equipment, the work in force, etc.?

A. It did.

X Q. 72. When did you first see an apparatus like that shown in Fig. 1 on page 149 of the Engineering News of Feb. 28, 1901, to which your attention has been called, in use with the belt conveyer in a position with its delivery end raised above the receiving end, as shown in that figure?

A. In 1902.

[fol. 552] X Q. 73. And you were quite familiar with the use and capabilities of that apparatus from 1902 to 1909, were you?

A. Yes, I was.

X Q. 74. Did the endless belt in that apparatus carry cross-bars or were they flat surface belts?

A. Flat surface with pulley.

X Q. 75. That is, the surface upon which the concrete was carried was a smooth surface?

A. It was.

X Q. 76. Well, you couldn't use that apparatus to handle a wet concrete, could you?

A. We would if the conveyer was on about a level of elevation.

X Q. 77. Even then you couldn't handle what is now commonly known as mush concrete, could you?

A. No.

X Q. 78. Your work as superintendent of construction for the Brownell Company during the years 1903 to 1909, inclusive, involved the superintendence of construction of a very large amount of reinforced concrete, or at least of concrete work, did it not?

A. It did.

X Q. 79. Is the hoist bucket shown in any one of the photographs forming Defendant's Exhibit 50?

A. Yes, in 50-B and 50-C. It is the device at the bottom of the tower at the side facing the observer, and just above the railroad tracks in 50-B. In 50-C the bucket is in dumping position.

X Q. 80. In Defendants' Exhibit 50-B, I notice an upwardly and outwardly extended arm, the upper end of which appears to be propped under the outer end of what I understood you to call a boom. I have designated this part on photograph 50-B by the letter X and an arrow. Is this the part that you say is a cable?

A. It is.

[fol. 553] X Q. 81. Will you please examine this photograph with a magnifying glass and see whether you want to make any change in your last two answers?

A. Looking at this picture with a magnifying glass, it looks that in place of it being a cable it looks like a piece of timber running from the tower to the bottom of the boom.

X Q. 82. You never saw this apparatus, which you say you used at Ashtabula, with a timber in the position indicated by the picture Defendants' Exhibit B, did you?

A. I don't remember seeing that.

X Q. 83. The timber or "dolly," to which you have referred, was bolted on the under side of the part you called the "boom," and rolled on a special timber provided for it and forming part of the tower structure; is that correct?

A. It is, it did.

X Q. 84. That timber had to be a fairly wide timber, did it not?

A. It did.

X Q. 85. It was a special wide timber placed in the tower structure to form a platform for the dolly?

A. It was.

X Q. 86. You found that this apparatus was very substantially beneficial in speeding up the work on No. 2 Dock at Ashtabula, did you not?

A. I did.

X Q. 87. And by its use you were able to decrease the number of laborers you were required to use if you used the old wheelbarrow method?

A. Yes.

X Q. 88. And you were able to place the concrete at considerably less expense than you could have done by the wheelbarrow method?

A. Yes.

Cross-examination closed.

[fol. 554] Redirect examination by Mr. Jones:

R. D. Q. 89. The brace shown in Exhibit 50-B is not shown in 50-C, is it?

A. It is not.

R. D. Q. 90. Is there anything in the post card picture Exhibit 51 which appears in the photograph 50-C?

A. Yes, the Hewlett ore machines.

By Mr. Jones: Referring to the objection made to this testimony, defendants' counsel wishes to state that these three photographs, Exhibit 50, were mailed to Mr. Hood several days ago, together with two affidavits and photographs relating to Webber Dam Spouting Apparatus used in Michigan in 1906, and Mr. Hood was given an opportunity to stipulate as to either of these two cases if he wished to do so.

By Mr. Hood: Counsel for plaintiffs have no sufficient data upon which to justify the proposed stipulation.

Deposition closed.

Signature of witness waived.

Met at 1:45 p. m.

Present: As before.

It is hereby stipulated that if Walter Cahill were called as a witness for defendants, he would testify that on August 3, 1910, he executed a contract on behalf of the Great Lakes Dredge & Dock Company,

said contract being executed also on behalf of the Iroquois Iron Company and relating to the building of complete foundations and dock ore yard for a two-blast furnace steel plant, this being the contract referred to in answer to Q. 74 of the Alderman deposition.

[fol. 555] EDWARD J. FUCIK, a witness called on behalf of the defendants, being first duly sworn, testified as follows:

By Mr. Hood: Counsel for plaintiffs objects to the examination of this witness, except in surrebuttal, on the ground that the time within which it was agreed that depositions on behalf of defendants might be adduced has expired, and, in accordance with said agreement, plaintiffs have begun the taking of depositions in rebuttal. Further depositions on behalf of defendants, in direct defense, are therefore improper without special permission of the court or without consent of plaintiffs.

Examination by Mr. Jones:

Q. 1. What is your name, age, residence and occupation?

A. Edward J. Fucik; 32 N. Hamlin Ave., Chicago, Ill., age, 41; occupation, vice president and assistant general manager Great Lakes Dredge & Dock Company.

Q. 2. Outline the character of the work this company engages in.

A. It operates on all the Great Lakes, in Philadelphia, New York and Albany, in dredging operations, and concrete foundations of steel plants, docks, concrete docks, bridge foundations.

Q. 3. What has your previous training and experience been?

A. It covers a period of twenty years, beginning in 1901, when I graduated from the University of Illinois, the College of Civil Engineering, and covers construction work which brought me in contact with concrete work for practically the entire period of twenty years.

Q. 4. State briefly what experience you have had in concrete work prior to the time you became associated with the Great Lakes Dredge & Dock Company.

[fol. 556] A. I was civil engineer in the employ of the Sanitary District of Chicago for four years, beginning in 1901, in the fall, was engineer in immediate charge, field engineer, in the construction of the foundations and superstructure of the Randolph St. Bridge over the Chicago river. Then was principal assistant engineer for a design of a high pressure water system for the City of Chicago, with George W. Jackson; then at Lockport, on the Lockport power development, for the Sanitary District of Chicago, up to the middle of 1907; then back again to Chicago with George W. Jackson as erecting engineer of the superstructure of Dearborn St. Bridge over the Chicago river, and also engineer in charge of the construction of a concrete disposal station shaft at Madison St. and the Chicago river, ending connection with George W. Jackson about April, 1908, and from June, 1908, to date with Great Lakes Dredge & Dock Company as construction engineer, estimating engineer, division engineer, assistant general manager and vice president.

Q. 5. Prior to 1908, had you ever seen chutes used for distributing concrete?

A. Yes, in—it was in about 1902, the spring of 1902, in placing the concrete for the east foundation of Randolph St. bridge; Jackson & Corbett used chutes to lead the concrete from the mixer down to the foundation. A year later they were used in a similar manner—a year later as far as my personal observation goes—they were used in a similar manner on the south foundation of the State St. bridge by the Great Lakes Dredge & Dock Company.

Q. 6. How were these chutes supported?

A. They were supported at Randolph St. bridge by resting on the bracing of the coffer dam, the mixer being 14 or 15 ft. higher than the bracing at the water line, and from there on led down into the [fol. 557] foundation and were hung by cables—from cables—so that they could be moved freely around inside the coffer dam, giving a radius of delivery of the concrete of about 25 ft. from the fixed point of support of the chute.

By Mr. Hood: Answer is objected to as relating to a structure and use not properly pleaded.

Q. 7. How did you happen to see these two construction jobs you have referred to?

A. The two jobs were being done for the Sanitary District by different contractors, and it was my custom to visit around the different construction jobs close by to keep informed of construction methods, I then being a young engineer just out of college and naturally it would be to my interest to become as well informed in that line as possible. That brought me into contact with other construction engineers and contractors and of course we would exchange ideas.

Q. 8. What was the consistency of the concrete used prior to 1908?

A. In order to answer that I would have to go back to 1901 and '02, for at that time, about 1902, there was considerable agitation among engineers of all kinds dealing with foundations, as to wet or dry concrete. The engineering fraternity was divided into two camps about that time, one advocating a concrete mixed quite dry and thoroughly tamped, and the other advocating using a concrete mixed quite wet or mixed to a consistency which would enable it to flow easily, and which did not require tamping after being placed. This agitation, to my knowledge, extended over a period of about five years, the wet fellows arguing that from a constructional standpoint the concrete was easier and more cheaply placed and made a more dense mixture. About this time, also, 1902, I joined the Western Society of Engineers and attended the meetings quite frequently, and heard papers read by different engineers on both sides of the question. The use of reinforcing steel in concrete became more customary about 1902, and a former professor of civil engineering of the University of Illinois, Prof. Pence, read a paper before the Western Society of Engineers, describing tests he

had made as to the expansion coefficient of concrete, with relation to the expansion coefficient of steels.

By Mr. Hood: The answer is objected to as secondary, not the best evidence.

Q. 9. What effect did the knowledge of these experiments have on the use of wet concrete?

A. These experiments brought out the fact that it was possible to use steel and concrete together, so far as the expansion coefficient was concerned, and following this with the increased use of reinforcing steel in concrete it was almost imperative that a wet concrete be used in order to have it properly placed around reinforcing steel. Really, according to my opinion, the introduction of reinforcing steel made it imperative that concrete more of a consistency of a liquid be used in order to build the structures then being designed, and this fact made it imperative that in handling this liquid concrete the chute or trough come into play.

Q. 10. Is this Prof. Pence the W. B. Pence whose remarks are quoted in the transactions of the American Society of Civil Engineers, part E, 1902, page 596, a copy of what purports to be a part of which is referred to in the supplemental answer in this suit and which I show you?

By Mr. Hood: The question is objected to as assuming matters not true; this witness has been merely shown a typewritten sheet containing certain unidentified matter.

[fol. 559] A. I am a member of the American Society of Civil Engineers. There is only one William B. Pence a member of that Society. If that is a true copy of those proceedings, that would be the William B. Pence.

Q. 11. What is the present view regarding the relative merits of wet and dry concrete?

A. The chemical engineers have been very active the last few years and the present practice is to aim at a more exact determination of the amount of water that should be used in mixing concrete. The practice is still to use concrete wet enough to slide through chutes, although within the last five years hydrated lime has been added to the mixture to increase or to facilitate the use of concrete—the placing of concrete through troughs and chutes.

Q. 12. Have you used chutes since your present connection began in June, 1908?

A. Yes.

Q. 13. Please refer to the photographs in Defendants' Exhibit 17 and describe briefly any of the apparatus shown therein with which you may be familiar.

By Mr. Hood: Reference to the various parts of Defendants' Exhibit 17 is objected to for the various reasons set forth in objections heretofore entered in connection with the attempted identification of the exhibits, it being agreed that such objections heretofore stated may be considered as entered wherever applicable to

all questions and answers of this witness relating to the said exhibit or the structures illustrated therein.

A. Referring to Exhibit 17-B, it is a picture of a floating mixer working on a pumping station foundation. This was one of the jobs I estimated for the Great Lakes Dredge & Dock Co. and subsequently followed through in its construction. I saw the mixer [fol. 560] shown in this exhibit on that work during the year—within the year it was marked, that is, 1909. My recollection is that this mixer went from that job at Gary by water to South Chicago and was there shortly after that time, and I also saw it working in the Illinois Steel Company's plant in the construction of the concrete top of one of their docks.

Referring to 17-C, which shows a picture of a concrete tower—a concrete hoisting tower, delivery hopper, concrete chute, and supporting booms. I had considerable to do with the calculation of costs of this work, which was the foundations and dock work, ore yards, for the blast furnace plant of the Iroquois Iron Company. We built two of these rigs complete for this particular job and the writer and our general manager, the general manager of the company, were directly responsible for the introduction of these rigs with practically all the main details, as shown on the print or the picture. I recollect distinctly the conference I had with our general manager, at which the booms for handling the chutes were brought out. The layout of the work made it imperative that we have a rig which would be able to deposit concrete fully 100 ft. from the point of mixing, so we elaborated a little on the mixing plant shown on 17-B and produced those shown on 17-C. So far as I knew, these booms were the first we had ever heard of in this particular locality —of such a large size.

17-D shows one of the towers shown on 17-C. I saw the plant shown on 17-D at work in Toledo—that is, on an inspection trip to that port I passed through that work, did not stop particularly for any length of time. That's all I have to say, I guess.

By Mr. Hood: The answer is objected to as wholly irrelevant and immaterial, on the ground that it relates to occurrences and apparatus subsequent to the date of the application upon which the [fol. 561] patent in suit was issued.

Q. 14. Did you and the general manager apply for a patent on this Iroquois Iron concrete apparatus?

A. No.

By Mr. Hood: Objected to as immaterial.

Q. 15. Why not?

A. Mr. Lutz and I considered this Iroquois rig a slight improvement over the older rig we had been using and did not think it was a radical enough departure from our former method of handling concrete to warrant bothering about a patent.

Q. 16. Where is Mr. Lutz now?

A. He is vice president and general manager of the company, but not in the city at present, being at Biloxi, Miss., on a vacation.

Q. 17. What is the purpose of the pulley block and hook shown above the hopper of photograph C?

A. That is used to adjust the height of the hopper on the tower according to the distance the concrete needs to be delivered from the tower.

Q. 18. When did you first use this tower apparatus of photograph C?

A. Oh, along the end of the summer of 1910.

Q. 19. Have you ever used such apparatus since that particular job?

A. Practically continuously since. There may have been slight modifications, of course, in the detail connections between the booms and the chutes. We have even gone back, in cases, to a rig shown on 17-B.

Q. 20. Of what were the chutes constructed in photograph C?

A. They were made of sheet steel. We roll them in our own shops, I think, at South Chicago.

[fol. 562] Q. 21. What cross-section?

A. Oh, about 12-inch diameter. They weren't chutes, they were pipes really.

Q. 22. What is the apparent enlargement at the upper end of the pipe and how is it secured to the hopper?

By Mr. Hood: Objected to as relating to a structure since Jan. 21, 1909.

A. The enlargement was a controlling device at the bottom of the hopper so as to control the flow of concrete from the hopper to the pipe. It is secured to the hopper with a sort of sliding connection or what you would call a flexible connection, so as to enable the pipe to be swung around in all directions from the tower and hopper, the hopper being stationary, and the pipe, of course, movable. We have the same thing on our hydraulic dredge, almost, which enables the dredge to be swung around in all directions and the pipe is fixed.

Q. 23. Explain more fully how the dredge is swung around and the pipe fixed.

A. The dredge is pivoted at the aft or rear end by means of a heavy spud timber or beam which is dropped to the bottom of the river or lake and locked to the hull after being dropped. The pipe is fastened to the rear end of the dredge by means of one of these flexible connections and the forward end of the dredge, which is the suction end, swings on this spud point with the length of the dredge and the length of the ladder frame to which the suction is attached as a radius. The pipe, which is from 12 to 24 inches in diameter, depending on the size of the machine or dredge, is supported on pontoons in the water and is stationary at that point.

Q. 24. How long have you been using such dredges?

A. About fifteen years. The company has been using hydraulic dredges about seventeen or eighteen years to my knowledge.

[fol. 563] Q. 25. Was this enlargement referred to in your answer to Q. 22 secured to the hopper or to the pipe?

A. It was secured to the pipe.

Q. 26. By a sliding connection to enable the pipe to be swung around in all directions, do you refer to a swivel connection?

A. Yes, the connection might be called a swivel connection in that one part overhangs, overlaps, and slides on the other or fixed part.

Q. 27. Are you familiar with the blue-print, Defendants' Exhibit 27?

A. Yes, I made the tracing from which this blue-print was taken off, and made it specifically for the purpose of showing the movements of the two tower mixers shown on 17-C, the print being in the nature of a progress chart based on movements of concrete mixers.

By Mr. Hood: The answer is objected to as immaterial on the ground that the tracing is shown to have been produced subsequent to the date of the patent in suit.

Q. 28. When did you make this drawing?

A. A few days before the date shown on the print, May 6, 1911.

Q. 29. Whose initials appear in the lower right-hand corner?

A. They are mine, E. J. F.

Q. 30. Was it necessary to brace or guy the towers of the Iroquois iron concrete apparatus?

A. Yes, we used steel cables in two directions only.

Q. 31. Was there any secrecy about the development or the use of these various concrete distributing structures that you have been describing in this deposition?

By Mr. Hood: Objected to as immaterial.

A. No.

[fol. 564] Q. 32. Were any working drawings made of these 1909 and '10 structures?

A. No.

Q. 33. Why not?

A. It was necessary to build them in a hurry and our custom is for the executive head to plan certain methods and devices for a certain piece of work, call into conference the field superintendents or foremen in charge of the particular work, sketch out with lead-pencil sketches our notions and ideas, and the foreman or superintendent does the rest with the aid of penciled sketches. This was the case with the towers shown on 17-C, in which case the speed of construction was of the utmost importance.

Q. 34. About when would you say you first conceived the use of a boom or booms for supporting the concrete pipe of this apparatus?

A. It must have been about July or the latter part of June, 1910.

Q. 35. How do you fix this 1910 date?

A. The contract was signed about August some time, and we

put in a proposal for the work in June and I think we received a verbal acceptance of our proposal in July some time and so we immediately got busy to organize the work as to methods and machines.

Q. 36. What year was this?

A. This was in 1910; the job was completed in 1911.

Q. 37. Are you familiar with the catalogue, Exhibit 19?

A. Yes.

Q. 38. By whom was it published?

A. By the Great Lakes Dredge & Dock Company; it was gotten out by the Great Lakes Dredge & Dock Co.

Q. 39. Can you produce the original photograph from which the two-page illustration on pages 32 and 33 was made?

[fol. 565.] A. Yes. It's the same picture shown in the catalogue as can be seen by inspection. I have the original picture here in my hand in Album No. 31 of our Progress Chart Album; the picture is picture No. 14591, dated Oct. 19, 1910, showing a view of the entire construction of the Iroquois plant under way at that time, and was taken in the ordinary course of our progress photographs of the work.

By Mr. Hood: Answer is objected to as irrelevant and immaterial in view of the fact, among others, that the date of the photograph is Oct. 19, 1910, a year and nine months after the date of the application upon which the patent in issue is based.

Q. 40. What was the practice of your company, during the first four or five years that you were with them, with reference to taking and preserving photographs of their work?

A. The custom was to take pictures, photographs of work in progress at irregular times with special stress being laid on pictures or photographs of the plant employed on the work.

Q. 41. What facilities do your branch offices have for keeping in touch with each other's work?

A. Our custom is to interchange photographs—that is, each division receives photographs of work in progress from all the other divisions, and special—and the information is further detailed by letters or personal visits of the operating managers.

Q. 42. For how long a period have you been familiar with the various photographs that you have referred to in Exhibit 17?

A. From the date of the various photographs to which I have referred.

Q. 43. Where are the plates of the photographer Christy whose name appears on these photographs?

[fol. 566] A. Christy died some years ago and we bought some of his plates. I do not know whether these Iroquois pictures, the plates of the Iroquois pictures, are in the plates we bought from Christy.

Direct examination closed.

By Mr. Hood: Counsel for plaintiffs moves to strike the deposition from the record, and tax costs against defendants, for the reasons set forth in connection with the depositions of Bannister and Follwell.

Cross-examination by Mr. Hood without waiving objections:

X Q. 44. The use of steel rods and bars imbedded in concrete, for the purpose of strengthening the concrete under tension, was well-known to engineers considerably prior to 1901 and '02, was it not?

A. Not in this country. The French were one of the early users of steel imbedded in concrete, and the use of this combination of steel and concrete was known but not well known. Shortly after 1901 it became well-known enough to admit of its practical use by constructors.

X Q. 45. What kind of chutes did you see used for handling concrete in June, 1908?

A. They were semi-circular—some were semi-circular in cross-section and some were rectangular in section; the chutes were from 10 to 15 feet long. I used these kind of chutes, both semi-circular and rectangular, in February, 1908, at Madison St. and Chicago River, in Chicago, being then in direct charge of the construction.

X Q. 46. And how were they supported?

A. In the particular instance which I have in mind, one end of the chute was fastened to the mouthpiece—to the discharge piece—of the mixer by means of chains; the other end led down—the chute [fol. 567] led down into a shaft 40 feet deep and was supported with cables fastened to the bracing in the pit.

X Q. 47. You found that the apparatus illustrated in Defendants' Exhibit 17-C enabled you to place concrete at a less cost than you could have placed it by wheelbarrows, did you?

A. Yes.

X Q. 48. Is the Great Lakes Dredge & Dock Co. contributing to the defense of this suit?

By Mr. Jones: Objected to as immaterial and outside the scope of the direct examination.

A. No.

X Q. 49. Is it contributing to the payment of attorney's fees?

By Mr. Jones: Same objection.

A. No.

Cross-examination closed.

Deposition closed.

Chicago, Ill., Monday, April 4, 1921—10 a. m.

Parties met pursuant to adjournment. Present: As before.

RUSSELL H. FOLWELL, a witness produced on behalf of defendants, being duly sworn, testified as follows:

By Mr. Hood: Counsel for plaintiffs objects to the examination of this witness, except in surrebuttal, on the ground that the time within which it was agreed that depositions on behalf of defendants might

be adduced has expired, and, in accordance with said agreement, plaintiffs have begun the taking of depositions in rebuttal. Further depositions on behalf of defendants, in direct defense, are therefore improper without special permission of the court or without consent of plaintiff.

[fol. 568] Examination by Mr. Jones:

Q. 1. Please state your name, age, residence and occupation.

A. Russell H. Folwell; age, 50 years; Chicago; occupation, engineer and contractor.

Q. 2. State the character of the work in which you are engaged, and outline briefly your past experience.

A. The business in which I am principally occupied is designing and building structures of steel and concrete, more particularly grain elevators, flour mills, municipal and industrial work, involving the use of concrete and steel.

I was educated in Cornell University, graduating from there in 1894; was then employed as draftsman for the Detroit Bridge & Iron Works two years, Great Northern Railroad four years, principally engaged in designing construction of their grain elevators, one of steel construction at Buffalo with a storage capacity of 2½ million bushels, the other at Superior, Wisconsin, a steel structure of 3 million bushels' capacity. In 1901 I became associated with Barnett & Record Co. of Minneapolis, as chief engineer and treasurer. In 1905, to 1916, I was chief engineer and partner in James Stewart & Co., since which time I have been in business in my own organization, Folwell-Ahlskog Co.

Q. 3. Where were you in February of this year?

A. I was in Norfolk, Va.

Q. 4. How long were you away from Chicago on that trip?

A. From the latter part of January to latter part of February.

Q. 5. Did you receive any communication from me with reference to testifying by deposition in this case?

A. I received a letter while I was in Norfolk, just leaving Norfolk.

[fol. 569] Q. 6. Where did you go from Norfolk?

A. Went to Baltimore, New York, Pennsylvania—Philadelphia.

Q. 7. When you reached your office were you advised as to inquiries from me regarding your return?

A. Yes.

Q. 8. Please examine Defendants' Exhibit 11 and state whether you are familiar with it.

A. Exhibit 11 is a blue-print No. 58, made in the Barnett & Record office Oct. 22, 1904; it was drawn by a draftsman named Frank Dustin under my direction. And Sheet 89, blue-print drawn by draftsman named H. W. Benneche, is dated Feb. 7, 1902, and was drawn under my direction. Sheet No. 58 shows the details of a spout to the mill from a grain elevator at the Minnesota Linseed Oil Co., Minneapolis; the spout was circular, 11½ inches in diameter, made of No. 14 steel, about 60 feet long on the horizontal and about 36 feet high. It was supported on a ½-inch galvanized

steel cable with hanger cables every 12 feet 9 inches at top. The spout is made in sections, 12 feet 9 inches long, which were fitted together.

Q. 9 Whose long-hand initials R. H. F. appear on these two blue-prints?

A. They are my personal initials, made by myself.

Q. 10. When did you put your initials on the tracings?

A. At the time the tracings were finished and given me to be checked and approved; I presume it was about the date of the drawings.

Q. 11. Was the apparatus shown on these two prints ever used?

A. The apparatus was constructed in accordance with the plans as shown.

Q. 12. Was it successful or unsuccessful?

A. Successful.

Q. 13. What connected with the upper ends of the spouts shown in these two prints?

[fol. 570] A. The upper ends of the spouts were constructed with an enlargement forming hoppers, and grain spouts were connected to them in the elevator.

Q. 14. Describe these grain spouts briefly.

A. I haven't sufficiently definite recollection of those grain spouts to describe them. I can't remember which particular spouts went into those hoppers.

Q. 15. What were the prevailing spouts used at that time?

A. All types of movable and fixed spouts were used in grain elevators at that time. Of the movable type, those in the grain elevators were either portable or so constructed that they revolved around a fixed point. A great many patents were taken out on spouts in those days, among them the Mayo spout and the Robinson spout, the Bird spout and Parker spout. The last four of the revolving type were used in grain elevators generally under scale hoppers. Outside of the buildings they had spouts for shipping grain to cars, which were generally fixed in position with a telescope end either with one opening or two, so arranged that grain could be thrown into either end of the car. There was another type of spout for shipping grain to boats or vessels; these spouts were generally supported on booms, either horizontal or inclined. The spouts were made to raise and lower about a hinge at the top, also to revolve in a horizontal direction, at an angle of about 180 degrees, or as far back as the building or structure upon which they were supported. These dock spouts also had outer sleeves which telescoped lengthwise on the upper section, so that the spout could be made longer or shorter to suit the requirements of the vessels which they were loading. A good many details in the different kinds of dock spouts have been patented. I recall one in particular was a Ballinger spout, which was installed in the Great Northern elevator at Superior, [fol. 571] Wisconsin, in 1900.

Q. 16. Please examine the blue-prints, Defendants' Exhibit 29, and state if you are familiar with any of the devices shown therein.

A. Blue-print WG-575 is a diagram drawing of the Ballinger

Dock Loading Spout, manufactured by the Webster Mfg. Co., at Chicago, for the Great Northern elevator at Superior, Wisconsin.

Q. 17. Who designed the Great Northern elevator?

A. I was chief engineer in charge of the designing for the Great Northern elevator and the design of the elevator was worked out jointly with Mr. Ballinger, who was then superintendent of grain elevators for the Great Northern Railroad.

Q. 18. State whether you have ever seen apparatus such as shown in the remaining blue-prints of this exhibit.

A. I have never seen the apparatus shown on WG-581 as actually constructed, which shows a Ballinger spout with an inclined boom. I, however, have seen a similar spout on the harbor elevator galleries at Montreal, which had the inclined boom but did not have the Ballinger slotted sleeve.

By Mr. Hood: References to the construction at Montreal are objected to as irrelevant and immaterial.

Q. 19. What did the boom support?

A. The boom supported a spout of similar character with an upper revolving section and a lower sleeve that was closed, in which detail it differed from the Ballinger spout. As I understand, the distinctive element of the Ballinger spout was the slot in the top of the lower section or telescoping sleeve, so as to allow the upper swiveled section to be supported by the tackle at the extreme lower end.

[fol. 572] Q. 20. Do you know whether inclined booms of this general type have been used in the United States for supporting downwardly inclined grain pipes?

A. I know from my general information that they have been used in this country at New Orleans and Portland, Maine, but I personally never have seen them in either of these places.

By Mr. Hood: The answer is objected to as incompetent, hearsay.

Q. 21. I call your attention to a copy of J. L. Record patent 657,335, Feb. 5, 1901, Adjustable Coal or Ore Spout, and will ask if you know anything about the patentee of the apparatus.

A. I know Mr. J. L. Record, who is the same Mr. Record of the firm of Barnett & Record Co., with which firm I was associated as chief engineer for several years. The patent drawings indicate a spout that was used on the Curtis Bay Coal Dock of the Baltimore & Ohio Railroad at Baltimore, which dock was built in 1900, just previously to the time that I became associated with Barnett & Record. I recall that I checked over the drawing of the coal spouts for this dock in Barnett & Record's office when I first went with them. As I recall, there was some mechanical interference of one part of the apparatus with another part. These spouts were made by the St. Paul Foundry Co., but the nearest I have ever come to seeing them was when I passed by the coal dock at Baltimore several years ago; I didn't examine the spouts closely or the dock at that time.

By Mr. Hood: The answer is objected to as largely hearsay and wholly irrelevant and immaterial, and an unnecessary incumbering of the record.

Q. 22. Was this mechanical interference overcome?

A. I don't recall the exact cause of the mechanical interference, [fol. 573] but I believe it had something to do with not having sufficient clearance between one part and another; I presume the matter was properly fixed, as we never heard anything more in the office about the trouble.

By Mr. Jones: This patent will be added to the answer by amendment and offered in evidence later with the other patents relied on.

Q. 23. Do you know the witness, W. R. Sinks, whose name appears at the end of the claims?

A. I do. I've known Mr. Sinks since 1900. He was superintendent of construction for Barnett & Record during the period in which I was associated with that company, 1900 to 1905, at which time he and I became partners in James Stewart & Co. and moved to Chicago. Mr. Sinks was manager of the grain elevator department of Stewart & Co. from 1905 to the present time.

Q. 24. Can you identify the apparatus of Defendants' Blue-Print Exhibit 30?

A. That's a blue-print of the steel spouts made in Barnett & Record's office, Minneapolis, by Otis Getchell, for the Curtis Bay Dock at Baltimore & Ohio Railroad at Baltimore. As I recollect, the blue-print is the same drawing which I checked over at Minneapolis when I first went with Barnett & Record Co.

Q. 25. In how many directions can the coal spout move in this blue-print?

A. The drawing shows a pedestal upon which the spout can revolve at an angle of 180 degrees in a horizontal position, and a hinge about which it could revolve approximately 130 degrees in a vertical position.

Q. 26. Is this 180 degrees swing limited by any of the other parts of this apparatus?

A. Yes, sir, it is limited so that it can hardly swing in a horizontal position at all by the short spout which projects from the hopper or coal bin. It is also limited by interference with the [fol. 574] timber that supports the pedestal pivot.

Q. 27. Why is a limited horizontal swing, shown in this case, sufficient as compared with the half circle swing you have referred to in connection with grain spouts?

A. Grain spouts are much longer and it is necessary to swing them out of the way of the ship's tackle and boom; it's customary to swing them around against the side of the building. In coal and ore spouts, the spouts are much shorter and the usual method of closing the opening from the bin is to raise the spouts into an almost vertical position. Grain spouts have sliding gates to shut the grain off, so the position of the spout is not necessarily a factor in shutting off the grain from the bin.

Q. 28. If you had occasion to swing one of these coal spouts sufficiently to take advantage of the entire 180 degree swing referred to, what would you, as an engineer, do?

A. I would remove the two causes of interference shown in this particular drawing. I would substitute a bracket to support the pedestal pivot instead of using a long timber; and, secondly, I would enlarge the upper part of the spout so as to clear the short spout attached to the coal bin. Another way to accomplish this would be to put a circular bowl on top of the revolving spout, in a manner similar to that used in the Mayo spout for grain.

Q. 29. Could you have made these suggested changes at the time you were with the Barnett & Record Co. had the necessity presented itself?

A. Yes, sir.

Q. 30. You will note that the width of the fixed chute is shown on the blue-print as 4 feet and the width of the pivoted chute as 4 feet $6\frac{1}{2}$ inches. Please state about how far the fixed chute projects [fol. 575] into the pivoted chute and about how much swing it permitted the pivoted chute before it engages the fixed chute.

A. It projects approximately a foot and the horizontal angle that the pivoted section could make, before striking the fixed section, would be approximately an angle of $2\frac{1}{2}$ or 3 inches to a foot.

Q. 31. The interference by the horizontal beam would bear what relation to the angle of the pivoted spout?

A. As far as the interference of the pivoted section with the horizontal beam, I would say it could revolve 60 degrees either direction, or a total of 120 degrees; it would depend on the pitch of the spout or its angle with the horizontal.

Q. 32. Have you ever heard of a patent on wet concrete?

A. Yes, sir, I was shown one several years ago.

Q. 33. I call your attention to an article in the Engineering Record of Feb. 14, 1914, page 177, and Engineering Record of May 16, 1914, page 551, and will ask if the Ney patent referred to therein is the one you were shown?

By Mr. Hood: The question is objected to as wholly irrelevant and immaterial and incompetent. The witness is shown a type-written paper upon which appear fragmentary alleged extracts from certain alleged publications, the dates of which are many years subsequent to the patent in suit, and the matter of which does not appear to relate in any degree whatever to the subject-matter of the patent in suit. It is presumed that the purpose of this line of examination is to form a basis for the allegation that the Patent Office does not always cite the best references, but if that is the case no proper foundation has been laid for the examination of this witness on the subject. Counsel for plaintiffs protests against the wholly unwarranted padding of the record in this case with such [fol. 576] irrelevant, immaterial and incompetent and secondary matter.

By Mr. Jones: It is understood that plaintiffs' counsel will stipulate the publication of various magazine articles, called to his at-

tention, after he has had an opportunity to examine them. The pertinency of this Ney patent 939,072, Nov. 2, 1909, will appear later.

By Mr. Hood: Attention is called to the fact that the Ney patent 939,072 has not been pleaded and that the date of the application upon which it was issued lacks but a few days of being six months later than the date of the application on which the patent in suit was issued. So far as the supposed stipulation, referred to by counsel for defendants, is concerned, counsel for plaintiffs has no objection to consolidating the record as much as possible, but never has had any intention of blindly agreeing to something he has not seen. The particular copy referred to bears a date long subsequent to the date of the patent in suit, and nothing shown therein can possibly affect the issues of this case—at least when presented in the manner they are now sought to be presented. There is no foundation at present connecting the present witness with the articles referred to. Again, counsel for plaintiffs protests against encumbering the record in this way and at this late time.

A. Well, I cannot definitely state that it was the Ney patent that I saw several years ago. My recollection is that the patent that I saw involved the use of wet concrete, particularly having to do with making concrete so that it could be easily poured or molded.

Q. 34. Was there any discussion about this wet concrete patent you have referred to?

By Mr. Hood: The question is objected to as irrelevant, immaterial, indefinite as it does not identify the alleged "wet concrete" patent, and as apparently referring to occurrences subsequent to the date of the application upon which the patent in suit was issued.

A. The patent caused a good deal of amusement among engineers and contractors, particularly those who were engaged in building grain elevators, because for several years before the patent was issued we had been using wet concrete. I presume the use of wet concrete had been introduced by grain elevator engineers because of the use of narrow walls and sliding forms; it's impossible in building grain elevators' bin walls with sliding forms to use dry concrete, and the wetter the concrete can be mixed the more easily it is handled in construction and the better the finished work will be.

Q. 35. If you are familiar with Defendants' Exhibit 28, George M. Moulton & Company's book or catalogue, please state how long ago, to your knowledge, it was available to the public.

A. I have had a copy of this publication in my book case ever since 1905, at which time James Stewart Company took over the office of the George M. Moulton & Co. in the Fisher Bldg., Chicago. George M. Moulton & Co. had been in the grain elevator business for some years and about 1904 they got into some financial difficulties and went out of business.

Q. 36. Do you know where I obtained this particular copy which is used in evidence?

A. It's a copy that I loaned you.

Q. 37. Please state if you are familiar with the details of a structure such as shown on page 20 of this Exhibit 28.

A. I am.

[fol. 578] Q. 38. About how early did you see grain distributing apparatus of which this may be typical?

A. About 1897, when I first went into the grain elevator construction work.

Q. 39. Have you ever seen apparatus such as shown on page 49, more particularly the pipes or spouts and the supports for them?

A. Yes, I have seen this particular elevator in Buffalo.

Q. 40. Are you familiar with the apparatus illustrated in Webster Mfg. Co.'s catalogue M, Defendants' Exhibit 12, having the name R. H. Folwell on the cover?

A. I am.

Q. 41. How long have the swivels and spouts shown therein been used?

A. Some of them previously to 1900; I don't know how long before that.

Q. 42. Have you ever seen a dredge embodying the general features of Edwards' patent 363,468? If so, please state when and where you saw it.

A. Barnett & Record Co. built a dredge in 1899 that was similar to the cut shown in this catalogue; they used it on dredging and filling work for the Peavey Elevator Company at Duluth.

Q. 43. If this dredge is illustrated in Defendants' Exhibit 15, please point it out.

A. On page 49, the lower right-hand corner, there is an object that looks like the dredge in question.

Q. 44. Explain briefly the operation of the device projecting from the right-hand side of the cut, page XI of this Exhibit 15.

A. The apparatus you refer to is what is known as the marine leg pusher and consists of a vertical screw with a nut traversing the screw; to the nut is attached one end of a steel strut, on the outer end of which is a roller, upon which the marine leg rests. From [fol. 579] the roller there is a tie rod extending to a fixed pivot on the side of the marine tower. The screw is driven by a reversible bevel gear or motor. When the nut goes up or down, the marine leg is pushed out or in as required. I installed the first apparatus of this type in the Great Northern elevator in Buffalo in 1898, and the draftsman who was employed on that work, named Greenberg, and another named Hahn took out a patent on the apparatus.

Q. 45. Prior to 1905, were there any grain spout swivel connections available to the public other than those shown on the blue prints you have examined this morning?

A. The Mayo and the Robinson patent, the Parker and the Bird.

Q. 46. Do you use chutes supported from booms on a tower in your present construction work?

A. I haven't used any revolving chutes; I used fixed chutes. In constructing grain elevators with sliding forms, we build a platform over the top of the form which is raised by a jack. A tower, of

generally wooden construction, is erected at a convenient place beside the work and the concrete is hoisted to the top of the tower in skip buckets; up into a hopper that is arranged to move upwards on the tower by means of tackle or chain hoist. At the bottom of this hopper we have a gate with a short spout for filling wheel carts.

Q. 47. How long have you been using this apparatus?

A. I believe we first used it on the Canadian Pacific elevator at Port Arthur in 1903. We first used it in the United States in 1905 on American Malting Co.'s elevator at Buffalo.

Direct examination closed.

By Mr. Hood: Counsel for plaintiffs moves to strike the entire deposition from the record as irrelevant and immaterial, and on the further ground that the same has not been taken in accordance with [fol. 580] the Equity Rules for reasons set forth at the beginning of the deposition. Therefore Counsel for plaintiffs here moves that defendants be required to pay the plaintiffs the entire costs involved in attendance at this session, owing to the character and manner of taking the deposition.

By Mr. Jones: Defendants' counsel will present at such time, as a counter-claim, the cost of two unnecessary trips East in conjunction with the preliminary injunction hearing, first set in August, 1920, and then indefinitely postponed and set again in November, 1920, and resulting in the acceptance by plaintiffs of a bond from defendants, suggested by the court, without giving defendants a hearing on the merits after they were fully prepared for both hearings with affidavits from parties scattered from the Atlantic to the Pacific.

No cross-examination.

Deposition closed.

Recess.

ROBERT H. HUGHES, a witness produced on behalf of the defendants, being first duly sworn, testified as follows:

Examination by Mr. Jones:

Q. 1. What is your name, age residence and occupation?

A. Robert H. Hughes; 5000 Kenmore Avenue, Chicago, Ill.; age, forty; occupation, carpenter by trade; building superintendent at present.

By Mr. Hood: Counsel for plaintiffs objects to the examination of this witness, except in surrebuttal, on the ground that the time [fol. 581] within which it was agreed that depositions on behalf of the defendants might be adduced has expired, and in accordance with said agreement plaintiffs have begun the taking of depositions in rebuttal. Further depositions on behalf of defendants in direct defense are therefore improper without special permission of the court or without consent of plaintiffs.

Q. 2. Where were you employed in 1907 and 1908?

A. St. Louis.

Q. 3. By whom were you employed at that time?

A. Gilsonite Construction Company.

Q. 4. On what buildings were you employed?

A. American Theater and the colored high school, and a whole lot of jobs.

Q. 5. If either of these buildings involved the use of concrete, state what kind of apparatus was used for placing the concrete.

By Mr. Hood: In so far as the question relates to the colored high school, it is objected to as not properly pleaded.

A. What we call spouting chutes.

Q. 6. Was spouting used on both buildings?

By Mr. Hood: Objection repeated.

A. On both buildings.

Q. 7. Who had charge of the spouting on the American Theater Building?

A. A man by the name of Herman Banks was superintendent and the assistant who had charge of the actual operation of it was named William Best.

Q. 8. Can you make a sketch of the apparatus used on the colored high school?

A. Yes, I have done so.

By Mr. Hood: The answer and sketch are objected to on the [fol. 582] ground that the matter has not been properly pleaded.

By Mr. Jones: The sketch is marked Defendants' Exhibit 53, Hughes' Sketch of 1908 High School.

Q. 9. Please describe this apparatus.

By Mr. Hood: Question objected to as relating to matter not properly pleaded, and it is agreed that this objection will be considered as entered to all questions and answers relating to the same subject-matter.

A. It consisted of a tower about 150 ft., guyed with $\frac{3}{4}$ -inch cables; chutes were suspended from cables at each section-point running down to a tripod; a hopper was placed at top of tower; concrete was delivered into the hopper by a skip. The chutes are suspended from the cable by a block and fall; these chutes run down to within about 20 ft. of the floor, and then it intersects in through another chute resting on a tripod, which carries it down to the floor and it is distributed around over the floor level.

Q. 10. Whose idea was this apparatus?

A. I suppose that was the superintendent's idea; he is the man who generally lays out his plan; William Best was the superintendent.

Q. 11. You mean on this colored high school?

A. Yes.

Q. 12. What part did you have in getting up this work?

A. My work was in building tower and placing chutes, and looking after equipment in general.

Q. 13. Was this outfit the same as that on the American Theater Building?

A. No, sir; it was with some exceptions.

Q. 14. Wherein was the American Theater Building different? [fol. 583] A. The chute was resting on a steel structure instead of being suspended from the cable.

Q. 15. When you wished to change the direction of these chutes on the colored high school, how would you do it?

A. When we couldn't reach it with the lower chute, we would change our line of chute from the tower, hang them on a different cable, another cable.

Q. 16. Through how wide an angle could you direct them in this manner?

A. Oh, 50 feet.

Q. 17. How much of the floor area could you reach with your line of chute on different cables?

By Mr. Hood: Question is objected to as calling for an opinion and not for facts.

A. I can't answer that question with this one, but I can with this one. (Witness points to upper chute, then to lower chute.)

Q. 18. Answer it any way you wish.

A. I would say an area of 50 ft. square.

Q. 19. You mean a 50 ft. area with one setting of the line?

A. Yes.

Q. 20. If your main line projected in one direction from the tower, and at a later period, as you state, it swung around and hung from another cable, what was the maximum angle between these cables?

By Mr. Hood: Question objected to as assuming matters not proven or testified to by the witness.

A. I don't know if I get that question or not.

Q. 21. I make a plan view of the tower with a line of chuting running out from it at right angles. Please indicate on this paper how far you could move your line of chuting either to the left or right of that line and still connect to the hopper.

[fol. 584] A. What do you mean—at this point? (Witness points to the top of the tripod indicated in Defendants' Exhibit 53.)

Q. 22. Please draw a line on this sketch showing some one other position of the line of chuting besides the one that I have drawn.

(Witness draws four radial lines from the four corners of the tower.)

Q. 23. You mean by this that the chute would be connected to any of these four lines, including a swing of about three-fourths of a circle.

By Mr. Hood: Objected to as leading.

A. Yes.

Q. 24. How many lines of chuting did you use at one time?

A. One.

Q. 25. Did you ever use more than one?

A. No.

Q. 26. You never hung two lines of chutes from two different cables at the same time?

A. No.

Q. 27. What was the arrangement whereby the upper end of the main line of chutes connected with the hopper in these different radial positions of the supporting guy lines?

By Mr. Hood: Objected to as assuming facts not stated by the witness.

A. I don't know if I've got that question clear enough.

Q. 28. Explain the section which you have marked B in the sketch.

A. Let me ask you one, then I'll get it right. Do you want to know how section B is supported at the mouth of the hopper? Is that it?

Q. 29. Yes.

[fol. 585] A. It's either wired up or hung by rope.

Q. 30. Section A indicates a trough-shaped section. Of what material was this chute made?

A. Light, gauge metal iron.

Q. 31. Where was the tower with reference to the school building?

A. Outside center of the building.

Q. 32. As I recall it, you stated to me, in explaining this rig before this deposition started, that you used two lines of chutes on this building. Is that a fact or did I misunderstand you?

By Mr. Hood: The question is objected to as an attempt to lead the witness, and an attempt on the part of counsel for the defendant to testify and not under oath.

A. You must have misunderstood me, because you couldn't feed two chutes from one hopper.

Q. 33. How was the position of the lower section of chute changed?

By Mr. Hood: Objected to as assuming a fact not stated by the witness.

A. By lifting it up and moving it around.

Q. 34. About when did you first use this apparatus on the colored high school?

A. Spring of 1908.

Q. 35. How do you fix that time?

A. By figuring back on other jobs I was on.

Q. 36. How long were you on the American Theater job?

A. Six months.

Q. 37. What year?

A. 1907.

Q. 38. Did you see the St. Louis Coliseum under construction?

[fol. 586] A. Didn't observe it very close.

Q. 39. What year was the Coliseum built?

A. 1908 or 1909, to the best of my recollection.

Q. 40. Were you on any jobs between the American Theater Building and the colored high school?

A. No, sir.

Q. 41. Did you go directly from one to the other?

A. Yes, sir.

Q. 42. About how long was this apparatus used on the colored high school?

A. About six to eight months.

Q. 43. Does your sketch accurately indicate the construction of the upper end of the chute at the bottom of the hopper?

A. It doesn't show it as plain as section B.

Q. 44. Did the upper end of the chute receive concrete from the hopper in any of the different positions in which the line of chuting might be hung from the different cables you have referred to?

A. Yes, sir.

Q. 45. About how long was the main line of chutes?

A. Different lengths, according to where we were pouring at the time.

By Mr. Jones: That is all.

By Mr. Hood: Counsel for plaintiffs moves to strike the entire deposition as irrelevant and immaterial and for the further reasons set forth in the motion to strike the depositions of Bannister, Folwell and Fucik.

Cross-Examination by Mr. Hood without waiving objections:

X Q. 46. What is the precise location of the colored high school to which you have referred?

A. That I can't answer—east of Taylor Avenue.

[fol. 587] X Q. 47. Is it north of Washington St. or south?

A. North of Washington.

X Q. 48. About how far?

A. Two miles.

X Q. 49. And about how far east of Taylor Avenue?

A. Two blocks.

X Q. 50. Is it north of North Market St?

A. It's been so long I have lost track of the streets.

X Q. 51. What was the height of the building—how many stories?

A. Two stories.

X Q. 52. And what was its width and length?

A. The building was an E-shape, about 100 feet at each end by 400 feet long.

X Q. 53. And the tower was placed at about the middle of the main stem of the E, the 400 foot length, and on the outside of the building, was it?

A. Yes, sir.

X Q. 54. For what purpose did you suspend the first chute sections from the guy wires X and Y, which I have indicated on the sketch Mr. Jones made for you, and upon which you placed four diagonal lines?

A. The chutes wasn't suspended from any of the cables running back from the building.

X Q. 55. They you didn't shift the first chute sections from one position to another through as much as three-quarters of a circle, as indicated in Q. 23 and your answer to it, did you?

A. They could be but they wasn't in this particular case.

X Q. 56. Now, as I understand it, this building had a floor plan in the shape of an E, the main stem of the E being about 400 feet long and the upper and lower ends of the E being about 100 feet long; is that right?

A. Approximately.

[fol. 588] X Q. 57. And how wide were these building sections?

A. That was about 54 feet.

X Q. 58. How much concrete was placed in this building by the apparatus you have illustrated in Exhibit 53?

A. I don't know.

X Q. 59. Was it a reinforced concrete building?

A. Yes.

X Q. 60. Was all of the concrete of the foundation placed with this apparatus?

A. Yes.

X Q. 61. The frame of the building was reinforced concrete, was it—the columns?

A. Yes.

X Q. 62. Were the columns and first and second story floor slabs placed with this apparatus?

A. Yes, sir.

X Q. 63. Was there a reinforced concrete roof slab?

A. Yes, sir.

X Q. 64. And was the concrete of the roof slab placed with this apparatus?

A. Yes, sir.

X Q. 65. About what was the height of the roof slab from the ground?

A. About 50 feet.

X Q. 66. Who was the contractor on this job?

A. Gilsonite Construction Company, on the superstructure.

X Q. 67. Did the Gilsonite Construction Company place all the concrete?

A. Yes, sir.

X Q. 68. Was there a fellow named Fount M. Woodward on that job?

A. Not with the Gilsonite people.

X Q. 69. Please give the names and residences of such men as you now recall who worked on this job with you.

[fol. 589] A. I can't do that.

X Q. 70. Was there a man named Henry L. Webb worked on that job?

A. I don't recall whether he worked on this particular job but he was employed by the Gilsonite people at the time.

X Q. 71. You are depending on your memory as to the time when you say this apparatus was used on the colored high school, are you?

A. Depending on my memory? Yes, sir.

X Q. 72. And you don't remember what sort of apparatus was used in building the Coliseum at St. Louis?

A. No, I don't.

X Q. 73. You saw that job in course of construction, didn't you?

A. Saw it passing by, yes, sir.

X Q. 74. About how many times did you pass by the Coliseum while it was being built?

A. Quite a number of times, I don't know the exact number.

X Q. 75. Who was the architect on the colored high school job, do you know?

A. I don't recall.

X Q. 76. In what month did you begin the use of this apparatus you have described, on the colored high school?

A. March or April.

X Q. 77. You are not sure which?

A. No, sir.

X Q. 78. Might it have been as late as May?

A. Possibly.

X Q. 79. It might even have been as late as June, mightn't it?

A. No.

X Q. 80. When were you first consulted by Mr. Jones or anybody else as to your recollection about this apparatus used on the colored high school?

[fol. 590] A. First of February last.

X Q. 81. By whom?

A. By Mr. Jones.

X Q. 82. State briefly the circumstances which caused that interview.

A. It came through meeting Mr. Woodward on the street before Christmas, telling me that he was up in an attorney's office giving his deposition about the concrete equipment on the American Theater; so shortly after I received a letter from Mr. Jones asking me to come in.

X Q. 83. In shifting this first line of chutes from the hopper in the colored high school job, did you shift the guy line or did you separate the blocks and falls for the chutes from one guy line of the tower to another guy line of the tower?

A. We disassembled from one guy wire immediately to another.

X Q. 84. How many guy lines were there on the job?

A. There was probably six or eight, running across the building.

X Q. 85. That is, running across the building from the tower

and fastened at their lowest ends to some sort of a support secured in or to the ground?

A. Yes, sir.

X Q. 86. Well, to what did you fasten these different guy lines to the ground?

A. To a dead man.

X Q. 87. And about how far from the building were these dead men?

A. Far enough so that they cleared the building as it went up.

X Q. 88. That is, they were originally placed far enough away from the building so that the guy lines attached to them and attached to the top of the tower would clear the top of the building when it was done?

A. In some cases it would.

[fol. 591] X Q. 89. What was the condition in the other cases?

A. We would let them go through the floor and box around them and take them out afterwards.

X Q. 90. Did you suspend any of the chute sections from these guy wires which you say had to be boxed in or boxed around?

A. Yes, sir.

X Q. 91. For what part of the work did you suspend the chute sections from these guy lines?

A. Why, when we would build a floor up until it hit that cable we would let it remain in the same position, box around the cable at that floor, so we could remove it after the building was up.

X Q. 92. Well, what part of the concrete did you place by means of chutes suspended from the guy lines which you say were, in the course of time, boxed in, boxed around?

A. The concrete in the floor.

X Q. 93. The floors through which the cable passed?

A. Yes.

X Q. 94. I don't suppose you remember the name of the inspector for the school board that was on that job, do you?

A. I think it was Bob Wall.

By Mr. Hood: That's all.

Redirect examination by Mr. Jones:

R. D. Q. 95. Explain a little more fully how you placed concrete in a floor by means of chutes hung from a cable passing diagonally through that particular floor.

A. Why, that cable was at a position when the concrete of the first floor that it would clear it and be in a floor slab on the second floor.

R. D. Q. 96. And when you concreted the second floor, you didn't hang the chutes from the same cable, did you?

[fol. 592] A. Yes, sir.

R. D. Q. 97. How were you able to reach the area beyond where the cable went through the floor?

A. By moving our sections that rested on the tripod up close to the tower.

R. D. Q. 98. So the tripod section was long enough to reach to the edge of the floor slab, is that it?

A. Yes, you could lengthen out your section that rests on the tripod to reach the outer area.

R. D. Q. 99. How would you lengthen it?

A. Add another section on it.

R. D. Q. 100. You explained to Mr. Hood that on this job you did not actually hang the main line of chutes from radiating cables representing three-quarters of a circle. About what part of a circle was represented by the extreme outside cables?

A. (The witness indicates on the sketch an angle of about a quarter of a circle.)

R. D. Q. 101. Do you recall a tower in connection with the Coliseum structure?

A. No, I don't recall any of the equipment.

R. D. Q. 102. Is the Gilsonite Company still in business?

A. Yes, sir.

R. D. Q. 103. Do you know the address of William Best?

A. I do not.

R. D. Q. 104. Have you used chutes of this character on any building since 1908?

A. Yes, sir.

R. D. Q. 105. About how often?

A. Oh, ten or fifteen times since 1908.

Deposition closed.

Adjourned to meet tomorrow morning, April 5th, at the Fargo [fol. 593] Engineering Company's office, 212 West Courtland Street, Jackson, Michigan, with the understanding that if the examination of the witnesses cannot be completed in time for counsel for plaintiffs to reach Detroit in time to leave there for Indianapolis that night, counsel for plaintiffs shall have opportunity, if he desires, to cross-examine at a later date.

Met pursuant to adjournment at 9:35 a. m., April 5, 1921, at the office of Fargo Engineering Company, 212 West Cortland Street, Jackson, Michigan.

Present: Mr. Arthur M. Hood, for the plaintiffs, and Mr. M. F. Cargill, for the defendants.

WILLIAM G. FARGO, a witness for and on behalf of the defendants, being first duly sworn, testifies as follows, in answer to questions by Mr. Cargill:

By Mr. Hood, counsel for plaintiffs, objects to the examination of this witness, except in surrebuttal, for the reasons fully set forth in connection with the examination of the witnesses Bannister, Folwell, Fucik and Hughes.

Q. 1. Please state your name, age, occupation and residence.

A. William G. Fargo; age 53 years; residence, Jackson, Michigan; business, civil engineer.

Q. 2. When did you first hear of the suit of the Concrete Appliances Company v. Gomery et al.?

A. In the early part of March, this year.

Q. 3. Through whom did you hear of this suit?

A. Through the law firm of Sheridan, Jones, Sheridan & Smith, Chicago.

Q. 4. Did you receive a letter from Mr. Jones, dated October, 1920, regarding the early use of certain concrete spouting apparatus? [fol. 594] A. Never received this letter.

Q. 5. Assuming one was written, how do you account for your failure to receive it?

Objected to by Mr. Hood as immaterial.

A. From the copy of the letter received recently, it appears to have been wrongly addressed.

Q. 6. Did you ever have offices at the address to which the letter was sent?

Objected to as assuming.

A. The letter was addressed apparently to 118 East Main St., which location we left in 1906.

Q. 7. In what business were you engaged in the years 1905, 1906, 1907?

A. The general power plant engineering business.

Q. 8. Were you connected in any manner with the building of the Webber dam near Lyons, Michigan?

A. I was designing and supervising engineer. The work being done on force account, and I had charge of ordering materials and equipment for the owner, the Commonwealth Power Company.

Q. 9. Of what material was this dam constructed?

A. Of concrete.

Q. 10. By what means was the concrete placed on this job?

A. Concrete was mostly conveyed by small tip-cars from the mixer to the forms, and was placed in the forms mostly through chutes or spouts. The car ran along a trestle on the sides of which metal hoppers were placed, from which the spouting led the concrete to the forms.

Q. 11. If you were in a position to know, what was the general practice about 1905 and 1906, relative to the amount of water used in the concrete batch?

A. We were just beginning to use concrete mixed wet enough to be deposited by means of spouting.

[fol. 595] Q. 12. I hand you a photograph and ask you to state generally the process of handling the concrete by the apparatus shown there.

A. In this photograph there are no hoppers of the form usually adopted, and the concrete being dumped into the boxes, which served as hoppers, was pushed into the spouts leading from boxes—later

hoppers were substituted. This photograph shows some of the first concrete being placed at Webber dam.

Mr. Cargill: The notary is requested to mark the photograph Defendants' Exhibit No. 54, Webber Dam, 1906.

By Mr. Hood: Photograph is objected to as not properly proven.

Q. 13. Who took the picture?

A. I think the picture was taken by H. S. Hunt, who was resident engineer at Webber dam, and who is now a member of the Fargo Engineering Company.

Q. 14. When was the picture taken? Give the approximate date.

Mr. Hood: Objected to as incompetent in view of the previous answer of the witness.

A. I made weekly trips to the Webber job, and I know from the stage of construction shown that the photograph was taken in the early summer of 1906.

Q. 15. About how long were the chutes shown in the picture marked Defendants' Exhibit 54?

A. Approximately 40 feet.

Q. 16. How were the chutes supported?

A. By timber framing and by wires or cables.

Q. 17. Were the chutes so constructed that the place of the delivery of the concrete could be varied as desired?

A. They were.

[fol. 596] Q. 18. I hand you another photograph and ask you to identify the same.

A. This is a photograph also taken by H. S. Hunt at Webber dam in the summer of 1906.

Q. 19. Kindly describe the operation of the apparatus shown.

A. This photograph shows concrete being deposited through metal hoppers and spouting, the latter supported principally by cables, and being so attached to the hopper outlets as to permit of swinging around this point of attachment as a center.

Mr. Cargill: The notary is requested to mark this photograph Defendants' Exhibit No. 55, Webber Dam.

Q. 20. Please describe more in detail the means whereby the chute could be swung from side to side as stated.

A. The sections of the spouting were fastened together by means of lugs and short pieces of chain at each joint. The top section of pipe had a swivel connection, in some cases, to the hopper outlet. The swivel connection consisted of a flange either on the hopper outlet, or on the end of the pipe, engaging which were lugs attached to the opposite member. Other connections were by lugs and chain or lugs and bolts, the latter requiring removal of the bolts to operate the swivel.

Q. 21. Through how large an arc could the lower ends of the chutes be swung by means of the swivel connection just described?

A. The flange and lug swivel permitted the complete circle of

movement, except as restricted by the trestle or other supporting timbers.

Q. 22. How are the chutes supported in the picture marked Defendants' Exhibit 55?

A. The load of the chutes was carried principally on the hopper, [fol. 597] but there were one, and sometimes two, cables, from which the sections of the chutes were supported at the joints, and the lower end of the chute in this picture rested upon a concrete wall previously built.

Q. 23. I hand you another picture and ask if you can identify the apparatus and the job shown there.

A. This is a photograph of the upstream side of the bear-trap gate section of Webber dam, taken during construction, and showing the concrete being deposited through wooden hoppers and chutes. These were used because of the lack of metal equipment for the entire work.

Mr. Cargill: I will ask the notary to mark this picture as Defendants' Exhibit No. 56, Webber Dam.

Q. 24. Are the metal chutes, shown in the last picture produced, movable or are they stationary?

A. It was movable.

Q. 25. Describe the feature of their construction which permits this movement.

A. The one metal chute shown has the same essential features as described in the previous exhibit.

Q. 26. Referring to Defendants' Exhibits Nos. 54, 55 and 56, have you seen the same prior to today? If so, where?

A. Yes. We have the originals in our Webber dam files.

Q. 26a. You stated in a previous answer that you had charge of the purchasing of supplies or apparatus used on the Webber dam. From whom were these metal spouts purchased?

A. From Jarvis Engine and Machine Works, Lansing, Michigan, they being made up to order, from our sketching.

Q. 27. Did it ever occur to you, prior to 1908, that it would be [fol. 598] practical to use grain chutes having flexible sections and a swivel attachment near the top, for the purpose of placing concrete? If so, kindly state the particulars.

Mr. Hood: Objected to as grossly leading.

A. Yes. When we made the preliminary inquiry to Jarvis Engine and Machine Works, June 13, 1906, we referred, for description, to the grain chutes shown in H. Channon & Co.'s Catalogue No. 14, page 463. (Witness produces a press copy book and examines the impression of a letter of June 13, 1906, therein.)

Q. 28. What features of this chute referred to in the H. Channon Catalogue impressed you as being adapted for use in concrete work?

A. Its flexibility.

Q. 29. The witness is handed Defendants' Exhibit No. 12, Webster Mfg. Company's catalogue, and referred to page 201, and is asked

whether the flexible and swivel chute shown on that page is the substantial equivalent of the one shown on page 463 of the Channon Catalogue No. 14, which is also handed him.

A. They seem to be very much alike.

Q. 30. Witness is handed two blueprints and a typewritten copy of each and requested to identify the same, if he can.

A. These are copies of the original orders of Commonwealth Power Company to Jarvis Engine and Machine Works for concrete spouting and hoppers, dated, respectively, June 21st and July 21st and July 7th, 1906, being signed by this witness for the Commonwealth Power Company.

Mr. Cargill: The notary is requested to mark these blue-prints and the copies thereof Defendants' Exhibits No. 57, Shop Orders to Jarvis Engine and Machine Works.

Q. 31. Was the apparatus afterwards received from the Jarvis [fol. 599] Works and put into practical use?

A. It was.

Q. 32. Where was it used and when?

A. At Webber dam in the summer of 1906, and subsequently on other work for the Commonwealth Power Company.

Q. 33. Are you the William G. Fargo who is stated to be the author of an article entitled "Three Low Head Hydroelectric Developments in Michigan," printed in the Engineering Record of October 19, 1907?

A. I am.

Q. 34. Are you the author of another article, having the same title as the one above, which was printed in the Engineering Record of October 26, 1907?

A. I am.

Q. 35. Are you the William G. Fargo mentioned as being the writer of an article regarding concrete work which was printed May 31, 1906, in the Engineering News, on pages 605 and 606?

A. I am.

Q. 36. Are you the William G. Fargo who is stated to be the author of an article regarding concrete delivery plants, printed in the Michigan Engineer, in Volume 1905-1908, page 144?

Mr. Hood: Objected to as referring to a publication not pleaded.

A. I wrote such an article for the Michigan Engineer about 1905.

Counsel for the plaintiffs is informed that the articles by William G. Fargó, referred to in the four preceding questions, will be introduced in evidence at a later date.

Mr. Hood: Counsel for plaintiffs notes that the alleged article, "Concrete Delivery Plants," referred to by the witness, is not made [fol. 600] available by counsel for defendants to counsel for plaintiffs as a basis for cross-examination of this witness, and therefore objects.

Q. 37. Did you ever hear of the Concrete Appliances Company or

Wm. H. Insley prior to your first intimation regarding this present suit? If so, please state when and the circumstances relating thereto.

A. I don't remember the name of the Concrete Appliances Company. I have known Mr. Wm. H. Insley of Indianapolis for seven or eight years. I became acquainted with Mr. Insley about 1912, and a year or two after this he called on me for information regarding my early use of concrete spouting.

Q. 38. You may state briefly what information you gave him on that occasion.

Mr. Hood: Objected to as immaterial.

A. I gave him some of the same photographs which have been in evidence at this hearing, and other information of like nature.

Direct examination closed.

By Mr. Hood: Counsel for plaintiffs moves to strike the entire deposition from the record, and to tax costs involved in the attendance upon and taking of this deposition, for the reasons stated in the objection entered at the beginning of the deposition.

Cross-examination without waiver of objection:

X Q. 39. In this Webber dam job the mixer was approximately at the ground level and delivered directly into the dump cars, which appear in the Exhibits 55 and 56. Is that correct?

A. The mixer was set approximately on the ground level at the top of the bluff. From this point a level on the trestle extended [fol. 601] over the top of the dam, the concrete not being elevated.

X Q. 40. In that Webber dam job did the hoppers, at the upper ends of the chutes, have any controlling gates for controlling the flow of the concrete from the hoppers?

A. Most of them did not have controlling gates. Some of the hopper boxes, as shown in Exhibit 55, were fitted with gates.

X Q. 41. Were the metal hoppers shown in Exhibit 56 fitted with gates?

A. I don't think they were.

X Q. 42. Were the wooden hoppers shown in Exhibit 56 fitted with gates?

A. I am unable to say whether they were or not.

X Q. 43. In Exhibit 55 there appear to be two wires attached to opposite sides to each chute at or near its lower end, and these wires appear to be led back and up, diverging from the line of the chute, and attached to the trestle. Is that a correct description of construction shown in Exhibit 56?

A. It is a correct, but not a complete one, as there were usually wires connected from these main cables to the joints of the chute.

X Q. 44. Do you mean that in addition to the diverging wires which I have described, and which appear plainly in the photograph, there were also, generally, catenary suspension wires from these main diverging wires, to the chute at the joints between sections?

A. Yes, but not necessarily at all joints.

X Q. 45. In order to swing the chute, was it necessary to release both of the diverging suspension wires and readjust their fastenings?

A. Yes, unless they were attached at their lower ends to a frame or wooden horse which was movable.

[fol. 602] X Q. 46. And in that case their connection with the wooden horse had to be readjusted when you moved the horse?

A. Not necessarily.

X Q. 47. I understand you desire to make a correction as to the relative date of Exhibit No. 54.

A. In answering Question No. 14, I desire to strike out the word "early," referring to summer.

Deposition closed.

Subject to the objections heretofore entered, it is stipulated that if Horace S. Hunt were called and examined as a witness on behalf of defendants, he would testify that he is vice president of the Fargo Engineering Company, and in 1906 was resident engineer in charge of the building of the Webber dam referred to by William G. Fargo, in his testimony, and that the facts stated by the said William G. Fargo, in direct and cross-examination, relative to the construction of the Webber dam and the apparatus used therein, are true and correct.

By Mr. Hood: In the absence of principal counsel for defendants, counsel for plaintiffs, before proceeding with rebuttal depositions, calls upon counsel for defendants for a formal notice, in accordance with agreement, that depositions on behalf of defendants in direct defense are complete.

[fol. 603]

[Title omitted]

Depositions of witnesses on behalf of defendants, in accordance with notice and agreement, before Raymond S. Taylor, acting as Special examiner by agreement, at the office of Westervelt & Ball, 522-525 Citizens National Bank building, Los Angeles, California, on the 28th day of April, 1921, at 10 o'clock in the forenoon.

Present: George P. Barton, Esq., for defendants; Frederick S. Lyon, Esq., for plaintiffs.

Mr. Lyon: I appear here on behalf of plaintiffs without waiving any and all objections which may be had or taken to the taking of any deposition on behalf of defendants. I have no knowledge as to whether the taking of depositions on behalf of defendants is authorized, and have agreed to attend the taking of these depositions with the understanding that the solicitor of record for plaintiffs may urge to the court any and all objections which may be had or taken to the taking of these depositions, my appearance not to be considered as in any manner authorizing their taking, except that to accommodate defendants, notice of the time and place has

been waived by me subject to such and all objections which may be had or taken to the taking of any depositions whatever.

[fol. 604] THEODORE EMTMAN, the first witness, being duly sworn, and examined as witness in behalf of defendants, testifies in response to questions of counsel, as follows:

By Mr. Barton:

Q. 1. Please state your name, age, residence and occupation.

A. Theodore Emtman; 617 West Fortieth Place, Los Angeles; fifty-three; occupation, contractor.

Q. 2. What was your business in 1906, '07 and '08?

A. As near as I can remember, I was superintendent for the F. O. Engstrum Company.

Q. 3. I show you some photographs marked Defendants' Exhibit 44, A, B, C, D, Majestic Theater. Will you look upon those photographs and state whether you remember any work being done which corresponds to what is shown in those photographs?

Mr. Lyon: Objected to as incompetent, no foundation laid, the witness not being qualified to answer such question, it not being shown that the witness has any knowledge of such photographs and as leading and suggestive.

A. I never saw those photographs before to my knowledge.

Q. 4. State if you know whether the F. O. Engstrum Company had to do with any work connected with the erection of the Majestic Theater Building in Los Angeles, and if so, about what time?

A. To my knowledge they were general contractors. I do not remember the time.

Q. 5. Do you mean they were contractors for the Majestic Theater Building?

A. Yes.

Q. 6. Was that work done while you were superintendent of the Engstrum Company?

[fol. 605] A. Yes.

Q. 7. According to your best recollection, what was the year in which that work was commenced?

A. I do not remember at all.

Q. 8. You recall, do you, when you began working for the Engstrum Company—the year?

A. About 1894, I think.

Q. 9. How old were you then?

A. I do not remember.

Q. 10. What was the first work you did for the Engstrum Company, that you did?

A. Building.

Q. 11. What?

A. I do not remember.

Q. 12. Are you acquainted with Lee Callahan?

A. I am.

Q. 13. How long after you began working for the Engstrum Company did you become acquainted with Mr. Callahan?

A. I do not remember.

Q. 14. State approximately. One year after, or five or ten?

Mr. Lyon: Objected to as incompetent, calling for a mere guess by the witness, witness having already stated that he has no recollection.

A. I got acquainted with Callahan after 1900.

Q. 15. Where?

A. Could not tell, don't remember.

Q. 16. Are you acquainted with Mr. H. W. Bryson, who is now present in the room?

A. I am.

Q. 17. Did you know him in 1894, when you began working for F. O. Engstrum Company?

A. I did not.

Q. 18. Did you see the progress of the work while it was going [fol. 606] on in the erection of the Majestic Theater?

A. I did part of the time.

Q. 19. And was Mr. Bryson taking part in superintending that work?

A. Mr. Bryson is the general manager of the F. O. Engstrum Company.

Q. 20. Did you yourself act under Mr. Bryson at that time?

A. I did.

Q. 21. And did you give any directions or advice to him or to others in connection with the Majestic Theater work?

Mr. Lyon: Objected to as incompetent, as calling for a conclusion of the witness and not for a statement of fact.

A. Do not remember.

Q. 22. At the time that work was going on, did you know K. O. Wetzel?

A. I did not know K. O. Wetzel at that time, to my best knowledge.

Q. 23. When did you first know him?

A. Do not remember.

Q. 24. When I ask as to dates from you, you will understand that I do not expect you to remember, in all cases, the actual day or hour, so I will modify the last question, with this explanation, asking you to answer it approximately.

A. I do not even remember the year.

Q. 25. You are still associated in business with Mr. Bryson, are you not?

A. Only a business acquaintance.

Q. 26. Do you remember Swan P. Johnson?

A. I know him.

Q. 27. When did you first know him and in what connection? [fol. 607]

A. I do not remember.

Q. 28. Did you ever talk with Swan P. Johnson about any im-

provements that you thought you had made in concrete construction or in distributing concrete in the erection of buildings?

Mr. Lyon: Objected to as incompetent, irrelevant and immaterial, and inadmissible under the pleadings, and as not binding in any manner upon the plaintiffs, unless it is shown that such conversation was in the presence of the officers, and representatives of the plaintiffs or some of them.

A. Don't remember.

Q. 29. Did you ever talk with Lee Callahan about any such improvements?

A. I do not remember.

Q. 30. Do you say that you do not remember anything about any such talk about improvements in concrete construction that you had either with Mr. Callahan or with Swan P. Johnson?

Mr. Lyon: Same objection as last noted on the record.

A. Do not remember.

Q. 31. Nor with K. O. Wetzel?

Mr. Lyon: Some objection as last noted on the record.

A. Do not remember at the present time.

Q. 32. You recall, do you not, that Wetzel and Callahan were both working for F. O. Engstrum Company at the same time you were working for the Company, do you not?

Mr. Lyon: Objected to as leading and suggestive.

By Mr. Barton: It is apparent that this witness is called for [fol. 608] defendants and has appeared, though his associations and interests, I infer, are with the plaintiffs. This may be taken as an apology, if apology is necessary, for putting what might be considered otherwise leading questions.

Mr. Lyon: The statement counsel objected to is not evidence, and motion is made to strike it from the record and exclude it from consideration upon this ground and upon the further ground that it is not made under oath and is incompetent, no foundation laid. The fact stated by counsel is denied by plaintiffs. The witness has no connection whatever with the plaintiffs, and has appeared here voluntarily. The present counsel has talked with him before putting him on the stand, and plaintiffs insist that any attempted proof be produced strictly in accordance with the rules of evidence. Whatever inferences counsel may assert, certainly are not justified by the testimony of the witnesses, and the witness here gives every indication of being perfectly willing to answer fully so far as his recollection will enable him to do so, any competent question of counsel. Plaintiffs therefore insist that the deposition be conducted according to the rules of evidence.

A. I do; they were.

Q. 33. What was the approximate date?

A. Do not remember.

Q. 34. Do you remember if, during that time, you were by yourself or in association with others working out improvements in the distribution of concrete?

Mr. Lyon: Objected to as incompetent and as assuming facts not testified to by the witness and as leading and suggestive.

A. I do not.

Q. 35. Do you recall having an interference in the United States [fol. 609] Patent Office, an application of yours being involved with one of Lee Callahan's relating to material transferred in apparatus?

A. I do not remember about it.

Q. 36. I show you a Patent Office copy of letters patent No. 948,723, dated February 8th, 1910, to Theodore Emtman, assignor, to Concrete Appliance Company, of St. Louis, Missouri. I call your attention to the drawing of said patent especially. I will ask you if you are the Theodore Emtman mentioned in that patent?

A. I am.

Q. 37. I also call your attention to the Patent Office copy of letters patent No. 948,719, dated February 8th, 1910, to Lee Callahan, assignor to Concrete Appliances Company, of St. Louis, Missouri, and I direct your attention particularly to Figure 1 in the drawing of that patent, and ask you if you have any recollection of an interference in the Patent Office between the application for your patent, previously mentioned, and the application for this Lee Callahan patent.

Mr. Lyon: Objected to as leading and suggestive and incompetent, as witness is not qualified to answer the question. There is nothing to show that witness has any knowledge of the patent in question. It is incompetent, irrelevant and immaterial under the pleadings.

A. I do not remember.

Q. 38. Do you remember that you ever had an application for any patent involved in an interference with any application of Lee Callahan's?

Mr. Lyon: Same objection as last noted on the record.

A. It is so long ago that I cannot remember. What is on record will show.

[fol. 610] Q. 39. I have here a paper purporting to be a record. I will ask you to look at it and refresh your recollection by it, and after you have done so, please state if you were involved in an interference with Callahan.

Mr. Lyon: Same objection as last noted on the record.

A. It is nothing that refreshes my memory unless it has got my signature to it.

By Mr. Barton: The paper here referred to, being a certified copy from the United States Patent Office, is offered in evidence and

marked Defendants' Exhibit 58, Certified Copy Emtman Preliminary Statement.

Mr. Lyon: Objected to as incompetent, irrelevant and immaterial and inadmissible under the pleadings and not a part of the deposition of this witness.

Q. 40. I ask you to read Defendant's Exhibit Emtman's Preliminary Statement, which I now show you, and after reading it, state whether you recall any of the facts stated therein.

Mr. Lyon: Objected to as leading and suggestive and not a proper matter to prove.

A. I do not remember any of it. If the records are there, of course it's there.

Q. 41. You have read this preliminary statement carefully, have you?

A. Yes.

Q. 42. Do you believe this preliminary statement was made by you?

Mr. Lyon: Objected to as incompetent, irrelevant and immaterial, and as leading and suggestive.

A. I do not remember.

[fol. 611] Q. 43. The question is as to whether you now believe you made such preliminary statement, not as to whether you remember.

Mr. Lyon: Objected to as leading and incompetent.

A. I do not remember.

Q. 44. Where were you born?

A. In Norway.

Q. 45. When did you come to this country?

A. I don't remember.

Q. 46. About what time? About what year?

A. About 1877, or 1879, I do not know.

Q. 47. Would you say that you did not make the preliminary statement in question?

A. I do not remember.

Q. 48. What is your belief?

Mr. Lyon: Objected to as incompetent.

A. I do not remember.

Q. 49. Did you ever erect apparatus like that shown in the drawing of your patent 948,723?

Mr. Lyon: Objected to as leading and suggestive, and incompetent, calling for a conclusion of the witness, not the best judgment, and inadmissible under the pleadings.

A. Yes, sir. Not exactly according to these lines, but according to the principle.

Q. 50. I show you the drawing Fig. 1 of the Lee Callahan patent

No. 948,719. I will ask you if you ever saw apparatus that was erected according to what is shown in that figure.

Mr. Lyon: Objected to as incompetent and as leading and suggestive.

A. Do not remember ever seeing it.

[fol. 612] Q. 51. Do you note any differences in principle between the apparatus in the drawings of your patent and the apparatus of the drawing of Fig. 1 of the Callahan patent?

Mr. Lyon: Objected to as incompetent, no foundation laid, and upon the further ground that it is not the proper subject of the deposition and no leave has been granted to defendants to take expert testimony by deposition.

A. The drawings ought to show the difference without asking me that question.

Q. 52. In your answer to question 49, you say, referring to apparatus like the drawing of your patent: "Not exactly according to the lines, but according to the principle." What did you mean by that statement?

Mr. Lyon: Objected to upon each of the grounds contained in the objection to the original question.

A. The boom was probably was not built just like that; the rope was probably not attached just like that shown.

Q. 53. What was the structure that you first built according to the drawing of your patent referred to?

Mr. Lyon: Objected to as incompetent, irrelevant and immaterial under the pleadings.

A. I do not understand your question.

Mr. Barton: The drawing of your patent, I understand, was intended to illustrate an actual structure that you built and used. Is that correct?

Mr. Lyon: Objected to as leading and suggestive and as assuming facts not testified to by the witness and as incompetent, irrelevant and immaterial and as inadmissible under the pleadings. This objection will be understood as taken and repeated to each and every question asked and answer given by the witness in respect to any apparatus built by him.

[fol. 613] Mr. Barton: Counsel for defendants agrees to this.

A. Yes.

Q. 54. Where was that actual structure built?

A. I do not remember.

Q. 55. Did you ever see a structure built according to the drawing of the Callahan patent, Fig. 1?

Mr. Lyon: Objected to as incompetent and as leading and suggestive.

A. Not to my memory. I was not in San Diego at the time.

Q. 56. Was such apparatus used or applied in connection in with the Majestic Theater Building?

Mr. Lyon: Objected to as leading and suggestive, calling for a conclusion of the witness and not for a statement of facts.

A. It was.

Q. 57. Go on and describe it.

A. Half way of the building on the south side, ther was partially a tower and a concrete bucket to hoist the concrete up to a hopper and from the hopper distribute the same to pipe. Any more you want?

Q. 58. Were you there?

A. About two or three times.

Q. 59. Did you talk with any one about that?

A. Do not remember?

Q. 60. Did you see Mr. Bryson at that time in connection with it?

A. Do not remember?

Q. 61. Did you have to do with any of the apparatus at that time, with ordering it or designing it?

A. Elsewhere.

Q. 62. Do you mean at the Engstrum shop or some other place?

[fol. 614] A. Some other job.

Q. 63. Do you recall any difficulties with the distribution of the concrete at the Majestic Theater Building?

A. I do not.

Q. 64. What was the apparatus used?

A. I have just described it.

Q. 65. Describe it more in detail.

A. What other details do you want?

Q. 66. Describe so far as you remember.

A. Yes.

Q. 67. Then you have described what you recall?

A. I have described it.

Q. 68. Do you remember the times when you visited the Majestic Theater Building?

A. I do not.

Q. 69. Do you remember the year?

A. I do not.

Q. 70. You said you did not go to San Diego. Did you have to do with building the Elks Building, and did you have to do with building the Christian Science Church at Pasadena?

A. I did.

Q. 71. What were the dates of the work on the Elks Building at Pasadena?

A. Do not remember.

Q. 72. In your preliminary statement, I find the following language: "That deponent conceived the invention set forth in the said declaration of interference during the month of June, 1906." What invention did you refer to?

A. Do not remember.

Q. 73. "That he made a sketch of the invention during the month of October, 1906." What invention did you refer to in that statement?

Mr. Lyon: All of these questions in regard to this purported [fol. 615] statements of the alleged preliminary statements are objected to as assuming facts not testified to by the witness and as leading and suggestive, incompetent and irrelevant and inadmissible under the pleadings, and each of these objections will be understood as taken and repeated to each question answered by the witness without the necessity of hereinafter repeating the same.

A. I don't remember.

Q. 74. Do you recall any such sketch?

A. I don't remember.

Q. 75. I quote further: "That he first explained the invention to others during the month of December, 1906." Do you recall describing the invention in question as thus stated in your preliminary statement?

A. I do not remember.

Q. 76. I am not sure that I understand your answer.

A. I do not remember anything about it now.

Q. 77. There follows the phrase in your preliminary statement, "and again in October, 1907." Do you recall explaining the invention in October, 1907, as stated in your preliminary statement?

A. Don't remember.

Q. 78. Do you believe that you explained the invention to any one in October, 1907?

Mr. Lyon: The further objection is urged to this question that it is incompetent.

A. Do not remember.

Q. 79. The answer is not quite responsive to the question. The preliminary statement says that you explained it again in October, 1907. Now do you at the present time believe that you did explain the invention in October, 1907, as thus stated? It is not a question as to whether you remember the invention, but it is a question as to your present belief.

[fol. 616] Mr. Lyon: The belief of the witness is incompetent.

A. I do not remember at this time.

Q. 80. You have stated that two or three times before. The question is as to whether you believe you explained the invention in October, 1907.

Mr. Lyon: Same objection.

A. What else do you want me to answer, because I do not remember?

Q. 81. This preliminary statement appears to have been signed and sworn to by you the 31st day of July, 1909, and to have been filed in the Patent Office, August 16th, 1909, in matters of inter-

ference No. 30,618, Emtman v. Callahan. By means of this, I am endeavoring to refresh your recollection. I have asked you as to your memory and now I am asking you as to your present belief as to whether the statements which appear to have been made and sworn to at that time were correct. This question I will repeat in substance. That is to say, is it your present belief that you did explain to someone the invention in October, 1907, as appears in that preliminary statement? What is your belief now? Do you believe that you did or you did not?

A. I do not remember. If that thing has got my signature to it, it has got it typewritten.

Q. 82. But if you did make such a preliminary statement, sign and swear to it at that time, do you now believe that the statements thus made were true?

Mr. Lyon: The question is objected to as clearly incompetent. The question assumes facts that do not appear from the record, and whether a witness believes that a record is correct or incorrect is not binding upon the plaintiffs.

A. If it's got my signature to it.

Recess until 2 p. m.

[fol. 617] Q. 84. You are experienced in taking out patents, are you not?

A. I have taken out a few.

Q. 85. Was your application for patent 948,723 involved with an interference with Callahan and one Smith?

A. It was so long ago that I don't remember anything about it.

Q. 86. The patents were all taken out at the same time, and all three of those patents relate to concrete distribution, I think. I show you, to refresh your recollection, patent 948,746 to A. L. Smith.

A. I don't remember anything about the other patent.

Q. 87. I ask you to look upon the drawing, Fig. 1 of the Smith patent, and state whether you have ever seen apparatus built according to that drawing.

Mr. Lyon: Objected to as leading and suggestive, incompetent, irrelevant and immaterial, and inadmissible under the pleadings.

A. According to your Figure 1, to what does Fig. 1 appertain?

Q. 88. It is a part of the specification of the said Smith patent, designed to illustrate the structure that is described in the patent. The specification says: "Fig. 1 is a perspective view of a device embodying my invention." This is the drawing I refer to, and the question is whether you have ever seen a structure that was built in accordance with what is illustrated in the said Figure 1.

A. I have not.

Mr. Lyon: Same objection as before.

Q. 89. I am informed that there was an interference between your application and the Smith application and that you and Callahan

[fol. 618] also conceded priority of invention in that interference to Arthur L. Smith. One of the issues of the interference, I am informed, was as follows:

"1. In a device for distributing concrete, means for elevating the concrete to a point above the plane of work to be performed; a hopper adapted to receive the concrete so elevated; a primary distributing pipe revolubly mounted beneath the hopper; and a secondary distributing pipe revolubly mounted beneath the mouth of the first-named distributing pipe, substantially as described."

With this description of the issue before you, I will ask you again if you have any recollection of that interference with Smith; that is, between Emtman, Callahan and Smith.

Mr. Lyon: Same objection as last made.

A. I will answer you as before—that I do not remember.

Q. 90. Do you understand what is described by the language of that issue as quoted?

Mr. Lyon: Same objection.

Q. 91. You may read it yourself from the record, if you wish.

A. I understand the language, but I don't remember anything about it.

Q. 92. Did you have any talk with Callahan about making that concession of priority to Smith?

Mr. Lyon: Same objection as last noted on the record.

A. I do not remember.

Q. 93. Have you been paid anything in the way of royalties or otherwise on account of the Smith patent, the Callahan patent, or your own patent?

Mr. Lyon: Objected to as irrelevant and immaterial.

[fol. 619] A. It is a piece of my business that I don't consider anybody else's business.

Q. 94. Did you negotiate with Mr. Callahan as to how much you should receive, or how much he should receive on account of the Callahan patent?

A. I don't remember anything about it.

Q. 95. Did you receive anything for conceding priority to Callahan in the interference you had with Callahan alone, in which your preliminary statement, which has been made an exhibit, was filed?

Mr. Lyon: Objected to as incompetent, irrelevant and immaterial.

A. Same answer as before; it is so long ago that I don't remember nothing of it.

Q. 96. My information is that claims 1, 2, 5 and 13 of the Callahan patent, as issued, were involved in the interference you had with Callahan. To refresh your recollection, I will read one of these claims, as follows:

"5. An apparatus for the purpose described, comprising a tower, a conduit, extending laterally therefrom, a suitably supported, horizontal immovable boom, carrying the conduit; said boom being adjustably connected with the tower and adapted to be arranged at various points in the height thereof; means for raising plastic material to the point desired in the height of the conduit, and means for receiving plastic material from the raising means and conducting same to the conduit; the said receiving and conducting means being adjustable in the direction of the height of the tower."

Do you remember that you conceded priority to Callahan in that interference?

Mr. Lyon: Objected to as irrelevant and immaterial, leading and suggestive.

A. Answer same as before; I do not remember.

Q. 97. Do you remember any negotiations with Callahan about your conceding priority to him?

[fol. 620] A. As before, I do not remember.

Q. 98. Do you remember negotiating with Mr. Bryson as to what you should receive on account of any such concession or interest that the Concrete Appliances Company of St. Louis, Missouri, should have in the Callahan patent when issued?

Mr. Lyon: Objected to as incompetent, irrelevant and immaterial, and as a mere repetition.

A. As before, I do not remember.

Q. 99. Did you receive any stock, or were you a stockholder in the Concrete Appliances Company of St. Louis, Missouri, or did Callahan?

A. I do not know.

Q. 100. Do you not know whether you did yourself, whether you received any stock in that company?

A. You want me to tell the truth and you can take it down. It is none of your business.

Q. 101. Of course, personally, it is none of my business, but possibly the court would like to know. Won't you be so good, then, as to tell the court, and I wouldn't, if I were in your place, say to the court that it is none of the court's business?

Mr. Lyon: Objected to on the ground that the question is incompetent, irrelevant and immaterial.

A. I am very sorry that I do not remember.

Q. 102. I take it that you are an old concrete man, are you not? You know as much about it as most anyone, don't you, in a practical way?

Mr. Lyon: Objected to as leading and suggestive, incompetent and immaterial and that the object of the question is to lay the way for expert testimony, and the question is unauthorized, as defendants are not authorized to take expert testimony.

A. I am not made out of concrete.

[fol. 621] Q. 103. Now, after your pleasantry, which we all appreciate, will you say whether you consider yourself as one who has, from a practical standpoint, a great deal of experience in the use of concrete?

Mr. Lyon: Same objection as previous question.

A. I have handled quite a bit of concrete.

Q. 104. And was not your special work with the Engstrum Company giving advice and direction in the ways of placing concrete in the construction of buildings?

A. Mr. Bryson and I have conferred quite a bit on the placing of concrete and all other constructions.

Q. 105. And for ten or fifteen years?

A. Do not remember how long.

Q. 106. Do you recall using pipes for distributing concrete, the pipes being supported in various ways, and moved by hand, as occasion might require?

Mr. Lyon: This question is objected to as incompetent and irrelevant, leading and inadmissible under the pleadings.

A. I have.

Q. 107. And did you do the same at the Elks Building?

Mr. Lyon: Same objection.

A. We did that and most every other way during the experimental stage.

Q. 108. Are pipes now used for distributing concrete?

Mr. Lyon: Same objection.

A. Same answer.

Q. 109. How is it in Los Angeles?

A. I have not been looking.

Q. 110. Then you don't know?

A. Not at this time.

Q. 111. Then has your system and the Callahan system as shown [fol. 622] in his patent been unsatisfactory in some cases?

Mr. Lyon: Objected to as leading and suggestive.

A. I do not know.

Q. 112. Are you receiving any royalties or income whatsoever out of the Callahan patent, or your own patent, or the Smith patent?

Mr. Lyon: Objected to as irrelevant and immaterial.

A. I don't think anybody is receiving any royalties on account of such fellows as want to infringe.

Q. 113. So far, then, as you know, people are using the Callahan structure freely without reference to any royalty or contract?

Mr. Lyon: Objected to as leading and suggestive.

A. Something I don't know anything about whatsoever at present.
Q. 114. Do you know any one that is paying royalties for the use of the Callahan patent?

Mr. Lyon: Same objection.

A. You will have to go elsewhere to find out, because I don't know.

Witness dismissed.

THEODORE EMTMAN, being recalled on behalf of defendants, testifies as follows:

By Mr. Barton:

Q. 1. I show you a typewritten paper purporting to be copy of the deposition given by you in a suit in the Superior Court of British Columbia, between Concrete Appliances Company, plaintiff and W. K. Rourke, J. E. McDonald and R. Moncrieff, carrying on business as general contractors under the firm name and style of Rourke, [fol. 623] McDonald & Moncrieff, and the said firm of Rourke, McDonald & Moncrieff and Muzzens, Limited, Defendants. This copy is typewritten and consists of some nine pages. I will ask you if you recall that suit and recall giving a deposition in that suit.

Mr. Lyon: Objected to as incompetent and not the proper method of proof, and if for the purpose of impeachment an evident attempt by defendant to impeach own witness. If for any other purpose it is leading and suggestive and can be for no other purpose than to educate the witness for his testimony in this case, and as irrelevant and immaterial.

By Mr. Barton: I wish to disclaim even the thought of attempting to impeach this witness.

Mr. Lyon: The further objection has been urged that as the parties to such suit are not the parties to this suit, any deposition or testimony given in such suit can in no manner bind the parties in this suit.

A. I remember about the suit and remember something about the deposition, but nothing of what was in it. The records will show the questions that was asked me at that time.

Q. 2. I ask you to look over this deposition and state whether you recall the statements made in that copy as statements made by you at the time the deposition was given, which appears to have been on or about the 10th day of December, 1914.

Mr. Lyon: Objected to as leading and suggestive, as incompetent, not the proper method of proof, as immaterial, what testimony the witness gave in said suit, upon each of the grounds stated in the objection to the preceding question, and upon the further grounds

[fol. 624] that the foregoing instrument is uncertified and in no manner proven to be even a true copy of the alleged deposition and in no wise binding upon the plaintiffs to this suit.

A. I am unfortunate enough not to remember anything about what is in this copy.

Q. 3. You have had the copy in your hands and looked it over, have you not?

Mr. Lyon: Same objection.

A. Yes.

Mr. Barton: The typewritten copy is marked for identification "Defendant's Exhibit 60, Typewritten Copy Emtman Deposition of December 10th, 1914, in Vancouver Suit."

Witness dismissed.

Theodore Emtman.

The certificate of the magistrate to the foregoing depositions is hereby waived by counsel.

Commission closed.

April 29, 1921.

Met pursuant to adjournment.

Same parties present.

KURT O. WETZEL, the next witness, being duly sworn, testifies in response to questions of counsel as follows:

By Mr. Barton:

Q. 1. Please state your name, age, residence and occupation.

A. K. O. Wetzel; age, 40; 1221 Avenue 54; manufacturer of architectural and ornamental iron work.

Q. 2. What was your business in 1907, '08, '09 and '10?

A. In 1907 I was engaged in the same business as stated before. In 1908 I was engaged with the F. O. Engstrum Company as super-[fol. 625] intendent at the iron works and machine department, and continued in that position until 1915.

Q. 3. You may state what, if anything, you recall as to the construction of the Majestic Theater Building?

Mr. Lyon: Objected to as incompetent, no foundation laid.

Question withdrawn.

Q. 4. State whether you became acquainted at any time with Mr. Hugh W. Bryson, now present in this room, and if so, about when and in what connection?

A. I became acquainted with Mr. Bryson, according to my recollection, in the year 1906, during which time I was doing work in connection with my business for the F. O. Engstrum Company, and

later Mr. Bryson was general manager over the branch in which I was superintendent.

Q. 5. Are you acquainted with Theodore Emtman?

A. Yes.

Q. 6. And when did you first become acquainted with him?

A. I became acquainted with Mr. Emtman during the year 1905.

Q. 7. And in what connection?

A. In connection with work which I was doing for the F. O. Engstrum Company on building construction, where Mr. Emtman was superintendent.

Q. 8. State if you remember any particular work that was being done about that time by the Engstrum Company with reference to concrete construction.

A. Do you mean in the year 1905?

Q. 9. Yes; and immediately after that, 1906, '07 and on until 1910.

A. I do know that Mr. Emtman has had charge of concrete work on different buildings during these years.

[fol. 626] Q. 10. What were your relations with him, if any, in connection with such work?

A. In the employ of the F. O. Engstrum Company, it was my duty to supply all necessary tools and machinery to carry on such concrete work.

Q. 11. And from whom did you receive directions for furnishing such tools and machinery?

A. It was the custom in that business that we received our instructions from the man who was superintendent on the construction job, and also in general from the office executives.

Q. 12. From whom in particular, if you remember, did you generally receive such instructions or orders?

Mr. Lyon: Objected to as leading and suggestive and assuming a fact not testified to by the witness, as he received orders from someone in the building.

A. I received instructions from Mr. Bryson, from Mr. Emtman, Mr. Snook, Mr. A. B. Johnson, Mr. Swan Johnson—these are men that I largely dealt with in such construction.

Q. 13. I will ask you if during that time you were acquainted with Lee Callahan?

A. Yes.

Q. 14. In what connection?

A. In the same connection as previously stated, by working with them together in the construction of the buildings.

Q. 15. When did you first know Lee Callahan, in connection with what work?

A. I recollect to have met Mr. Callahan first during the year 1908.

Q. 16. In connection with what work?

A. I cannot remember in what relation we had a meeting, but it was in connection with our business.

Q. 17. State whether or not Mr. Callahan ever gave you instruc-

[fol. 627] tions or orders as to machinery or tools you should furnish?

A. Yes; Mr. Callahan also ordered all his tools, machinery and equipment through my department.

Q. 18. At what time?

A. I do not know any particular time when that was. These orders would come in at any time when needed.

Q. 19. State whether or not you talked with Lee Callahan about any inventions or improvements that he claimed to have made in connection with concrete distribution.

Mr. Lyon: Objected to as leading and suggestive and as incompetent, calling for a conclusion of the witness and not a proper method of proof.

A. Mr. Callahan has, at some time, talked with me in a general way of an invention which was involved in some litigation in Canada. Otherwise, I do not recollect that he talked of his invention with me.

Q. 19a. State whether or not you recall his having had a skip or bucket for carrying concrete.

Mr. Lyon: Objected to as leading and suggestive, and as immaterial.

A. Yes; we have received orders at one or two times for the manufacturing of a steel bucket which was called the Callahan bucket, and which I understand was Mr. Callahan's patent.

Q. 20. State whether or not you remember anything about the building of the Majestic Theater Building in Los Angeles.

A. I know no details of the construction of that building, as I had not been connected with the F. O. Engstrum Company during that period, but I have been at the Majestic Building during construction in search for business, at which time I have seen some of the work that was carried on.

[fol. 628] Q. 21. I ask you the same question about the construction of the Elks Building.

Mr. Lyon: Objected to as irrelevant and immaterial.

A. I have been at the Elks Building in the early part of construction, in making some figures for iron work, but later on have not paid any other attention to it.

Q. 22. About what was the date of the erection of the Elks Building?

A. To my knowledge, it was also in the year 1907, closely connected with the construction of the Majestic Theater Building.

Q. 23. I have been informed that the permit for the construction of the Elks Building was taken out in the summer of 1908. I mention this in order that you may state how certain you are as to the date of the construction of the Elks Building.

Mr. Lyon: Objected to as leading and suggestive, and the statement of date is objected to as not evidence in the case. I understood

the witness previous answer to be that according to his recollection, the Elks Building was erected in 1907, and he was simply giving us his best recollection of the fact and not asserting that he had any documentary evidence or memoranda upon which he based that recollection.

A. I do know that the Elks Building was built following the Majestic Theater Building, and I know this for the reason that during this period, when these buildings were more or less in a completed state, I took charge of the position as given before with the Engstrum Company, and that in connection with this I handled part of tools and machinery which were used in that construction.

[fol. 629] Q. 24. I show you some photographs marked "Defendants' Exhibit 44," and will ask you if you recognize them.

Mr. Lyon: Objected to as incompetent; no foundation laid.

A. I can only with safety state that I can only recognize the last picture shown in this exhibit.

Mr. Barton: The photograph last shown in this exhibit is marked in lead pencil "44-D."

Q. 25. What do you recognize it as representing? And what does it show?

Mr. Lyon: Same objection.

A. I recognize the building as to its appearance.

Q. 26. What building, in particular, does it show?

A. The construction itself, only.

Q. 27. And of what particular building?

A. The Majestic Theater Building, as it is called.

Q. 28. State whether or not you have seen other photographs showing the progress of the construction of the Majestic Theater Building.

Mr. Lyon: Objected to as leading and suggestive, incompetent, no foundation laid.

A. I have not seen any other photographs.

Q. 29. State if you know who was in charge of the concrete work construction of the Elks Building.

A. To my knowledge, Mr. Emtman was the superintendent in construction of that building, but I have not met him there in that capacity.

Q. 30. Do you recall, and if so, you may state, about the time of the construction of the Christian Science Church at Pasadena?

A. The Christian Science Church at Pasadena was one of the early buildings for which I supplied through my department all necessary [fol. 630] tools and machinery and other iron work, and it was built perhaps in the latter part of 1908 and also 1909.

Q. 31. Who was the superintendent?

A. On this building, Mr. Emtman was superintendent.

Deposition closed.

Kurt O. Wetzel.

Los Angeles, California, May 3rd, 1921.

Met pursuant to adjournment.

Present: George P. Barton, for defendants; Frederick S. Lyon, for plaintiffs.

LUTHER M. HILL, the next witness, having been first duly sworn, testifies in behalf of defendants in response to questions of counsel as follows:

Q. 1. Please state your name, age, residence and occupation.

A. Luther M. Hill; age, 38; residence, 203½ West Santa Barbara Avenue, Los Angeles; occupation, general manager for Charles A. Fellows, contractor, Los Angeles.

Q. 2. What has been for your work, say, for the last fifteen years?

A. For the last five years in the present position; for the five years previous to that, estimator and engineer for Carl Leonhardt, contractor, of Los Angeles; for the four years previous to that time, estimator and assistant superintendent for the Alta Planing Mill Company. They were general contractors of Los Angeles. My duties in all of this time have been to estimate the cost of buildings and bridges by counting the pieces in them, or otherwise reducing them to units; of listing and ordering materials required; of listing equipment required, laying out the work, and generally supervising its construction.

[fol. 631] Q. 3. I wish you would state in a general way the extent and character of the contracting work of the three different concerns you have mentioned, with which you have been connected.

A. During the first four years of the time specified above, we constructed one hundred and forty-eight buildings, in and around Los Angeles. These buildings were of various sizes, from the smallest bungalow or residence to such buildings as the original Kerekhoff Building, which is eleven stories, with steel frame and reinforced concrete floor construction; of such buildings as the seven-story reinforced concrete Pantages Theater Building on the east side of Broadway between Fifth and Sixth Streets—in fact of practically every class of commercial, factory, or residence building. During the five years that I was in the employ of Carl Leonhardt, we constructed principally factories and commercial structures, among these was the Hall of Records, which is eleven or twelve stories with structural steel frame and reinforced concrete floor construction; the Washington Building, which is eleven stories, with construction similar to the Hall of Records; the Stowell Hotel, which is of reinforced concrete twelve stories in height; the Gates Hotel, which is of reinforced concrete, nine stories high, and many other commercial structures.

During the past five years, while in the employ of Charles A. Fellows, I have handled principally railroad buildings, which we constructed under contract for the Atchison, Topeka and Santa Fe Railway Company. These buildings range from four-room frame section houses, with necessary outbuildings, to 34-stall reinforced concrete round-houses. Of the passenger station at Colorado Springs,

which cost approximately \$200,000, and of principally every class of building to be found along the railroad right-of-way. Among [fol. 632] other buildings we are completing at the present time, is the reinforced concrete ice manufacturing plant for the Santa Fe, just east of Los Angeles.

During the past fourteen years, I have been in active charge of more than \$1,000,000 worth of work per year, and during the last five years, probably \$2,000,000 worth of construction work per year.

Q. 4. State if you recall the construction of the Majestic Theater Building. Here you have a picture of it. Will you please refer to it?

A. The Majestic Theater Building was of reinforced concrete construction, with possibly some structural steel members and eight stories in height. There is a picture of this building about the center of the catalogue published by the Concrete Appliances Company of Los Angeles.

Q. 5. Is it the picture to the left of the title, "Hamburger Majestic Theater" in said catalogue?

A. It is.

By Mr. Barton: The picture referred to is offered in evidence to be marked "Defendant's Exhibit 59, Picture Majestic Theater Building."

Q. 6. Will you state where you were living at the time the Majestic Theater Building was under construction?

A. At 921 South Olive Street, Los Angeles.

Q. 7. And what is the location of the Majestic Theater Building?

A. On the west side of Broadway, near Ninth Street, Los Angeles, which is, I believe, three blocks east and less than a block north of where I was living. I passed this building night and morning on my way from and to work.

Q. 8. I wish you would go on and state fully and at length what [fol. 633] you saw in connection with the progress of the work of construction of the Majestic Theater Building.

A. I noted that this building was of reinforced concrete construction, and was interested, as any student actually engaged on similar work would be. I had never seen the plans for the building. I had watched its construction, partly out of curiosity, for the reason that the shoring which carried the form work over the theater proper was very heavy, and I was curious to know why, not knowing that the space over this theater was to be utilized. My chief interest centered in the system being used to distribute concrete. This system was new to me, and I inspected the methods used very closely, as it seemed to have merits, and I thought possibly that we could use this system to advantage on our own construction work.

Q. 9. Please go on and describe what the system of concrete distribution was, as you saw it at that time.

A. The system employed was to mix concrete on the ground and hoist it to a point well above the place where it was to be deposited into the form, dumping it into a hopper near the top of the construction tower. This was the usual method of mixing and hoisting concrete. From this hopper near the top of the tower the concrete was

conveyed by gravity through a pipe and deposited in forms. If my memory serves me right, and I think it does, this spot was supported by a scaffolding and tripods and was accessible from scaffolding in order that men might shake it, or otherwise start the concrete to flowing after it had choked up and filled the pipe.

Q. 10. Give, if you can, the picture that you have in mind now of the pipes, how they were supported, and if they were moved from time to time, state how they were moved—by what means or power.

[fol. 634] Mr. Lyon: Objected to as incompetent, and as leading and suggestive.

A. My memory is that they were supported as specified above, either by scaffolding or by tripod, and that they were moved as required by employees on the work. I know of no device for performing such labor; that is, at that time.

Q. 10a. Do you wish to be understood as saying that when a pipe was to be moved, the workmen took hold of it and carried it around?

Mr. Lyon: Objected to as leading and suggestive.

A. I do.

Q. 11. You may state whether you recall the use of a boom for supporting the chute or pipe as used in the construction of the Majestic Theater Building.

Mr. Lyon: Objected to as leading and suggestive; not proper manner of proof.

A. I do not remember of having seen a boom used in connection with the concrete distributing apparatus on this building.

Q. 12. You may state whether your observation was such that, if there had been such a boom used, you would have observed it, in your opinion.

Mr. Lyon: Objected to as leading, as incompetent, calling for a conclusion of the witness, not for a statement of facts—not the proper method of proof.

A. The concrete was hoisted—

Mr. Lyon: Answer the question, not something else.

Mr. Barton: I object to this gratuitous interruption of the witness, just as he was starting to do what counsel has asked him to do.

[fol. 635] Mr. Lyon: Read the witness the question. The witness will answer the question as it is asked and not something else, and it calls for a yes or no answer.

By Mr. Barton: It is for the witness to respond to the question in his own way.

A. Yes; it was. May I supplement that?

Q. 13. Yes; state anything further that you may wish to say to elucidate your answer.

Mr. Lyon: Same objection as noted to preceding question.

A. It was at times possible to see the spout and everything above it, from the time concrete was emptied into the spout, until its discharging end disappeared into wall forms of the building. I believe I would have seen a boom, had there been one.

Q. 14. You spoke of your observing the progress of that work, as being in the position of a student. What particular part of the work were you interested in in that connection?

A. All of it, as I was a student of structural engineering applying any knowledge that I might acquire from day to day on the work in which I was engaged. I was particularly interested in the method of depositing concrete in the forms for the reason that it looked to be much more economical to place concrete by the gravity method than it would be to place it by the usual methods employed at that time.

Q. 15. You have spoken of work done for the Sante Fe Railroad Company. Do you recall a job done at Las Vegas, New Mexico, and if so, state if you know what apparatus was there employed?

Mr. Lyon: Objected to as incompetent, irrelevant and inadmissible and immaterial to the issues of the case.

[fol. 636] A. I do remember this building.

Q. 16. My principal purchased from the Insley Manufacturing Company apparatus with which to place concrete on this work, and this apparatus was installed under the personal direction of their San Francisco representative, Mr. Garfield Myers.

Q. 16a. Please describe that apparatus, and state with what success, if with any success, it operated.

Mr. Lyon: Same objection as noted to preceding question.

A. The apparatus consisted of a one-inch steel cable, either end of which was attached to what is known as a dead-man in the ground, and its center resting on and supported by a construction tower, approximately 15 feet high. Standard Insley spouting was suspended from this cable with tackle, with the exception that the upper end of the spout was supported by a hopper at top of tower, and that a section fifty feet long at lower end of spout was supported at its upper end from the cable, and its lower end on a tripod. This lower section was so arranged that it could be moved horizontally in a circle providing our forces were large enough to lift it. It was taken down for the reason that it had been determined that we could place concrete much more economically without the apparatus than with it. Theoretically, it looked practicable, but in reality, it proved to be very burdensome and expensive.

After this apparatus had been taken down, the Insley Manufacturing Company sent Mr. Lee Callahan to me in the capacity of an expert. Mr. Callahan handed me letters from Mr. Garfield Myers and also Mr. Fellows, introducing himself, which, however, was quite unnecessary, as I had known Mr. Callahan for ten years. It is possible that I had only known Mr. Callahan eight or nine years. My instructions from my principal were to allow Mr. Callahan to [fol. 637] set the apparatus up again in any manner that he might

see fit, which he did by having constructed a wood boom, approximately 3 feet square at its center, and 160 feet long. One end of this boom after being raised was supported on one corner of our construction tower by forgings made especially therefor. Two cables were then fastened to the tower near its top with the other end of these cables attached to a forging on the end of the wood boom. The Insley spouting was then cut up into short lengths from five to six feet long, and the plates and lacing on top of spouts removed. These short pieces of spouting were then attached to the two cables, one running on either side, by wires. At the upper end of this spout, a standard Insley spout hopper was supported immediately under the gate below receiving hopper on tower. This spout then traveled downward at an angle of approximately 25 degrees, with its discharge end at end of wood boom. A short section was counterweighted to outer end of boom, and the apparatus so arranged that the boom would swing a three-quarter circle horizontally, and the counterweighted section horizontally for a full circle. This apparatus would then have allowed us to reach any point in the building with ease, providing it had been properly constructed. The boom was entirely too light, considering its length, and had been constructed over my protest. It failed fifty feet from its outer end, nearly causing serious injury to several of my employees. It having been satisfactorily demonstrated to Mr. Callahan that his apparatus was wholly impracticable, it was taken down and he left the work. We then constructed smaller and lower towers near the front of the building, and constructed a system of spouting similar to the larger one, but with only a 40-foot boom, and with spouting made from 24 x 72-inch sheet iron, which we happened to have on [fol. 638] the job. This apparatus served nine stalls, and while it was not more economical than the concrete could have been placed by other means, it served its purpose and satisfied my principal, as well as the Insley Company.

Q. 17. You speak of concrete placed by other means. What other means had you in mind?

A. By hoisting concrete and dumping it into a receiving hopper at a point above the line where the same was to be deposited, thence conveying it in wheelbarrows or standard concrete cars to where it was to be deposited into forms.

Q. 18. Was that the Insley apparatus paid for?

A. No, sir.

Mr. Lyon: Objected to as leading and as incompetent and immaterial.

Q. 19. They never asked you to pay for it, did they?

Mr. Lyon: Same objection.

A. No, sir.

Q. 20. You spoke of the relative economy of placing concrete by the gravity method and by other methods. Will you explain what you mean by this, and state if you know under what circumstances one method or the other may be the more economical?

Mr. Lyon: Objected to on the ground that it is incompetent and on the further ground that no leave has been granted the defendants to take expert testimony.

A. I can hardly answer that. It is necessary for a construction man to use judgment. It is only possible for any one to determine by empirical rules how it would be possible to place concrete or even to construct a building most economically.

Q. 21. What methods have you adopted as the more economical? [fol. 639] What methods do you employ at the present time?

Mr. Lyon: Objected to as irrelevant and immaterial, and on the grounds stated in regard to previous question.

A. I employ a gravity system, where I think it possible to place concrete most economically by that method; where I do not, I use any one of several methods which I consider to my advantage. We used carts on the last building constructed.

Q. 22. Does C. A. Fellows or any one else, so far as you know, pay royalties for the use of the gravity system?

Mr. Lyon: Objected to as leading.

A. Mr. Fellows does not.

Q. 23. In planning your work, do you use the gravity system without reference to any patents just as freely as if no patents had been issued?

Mr. Lyon: Objected to as leading.

A. I do.

Q. 24. About what was the date of the installation of the work at Las Vegas?

Mr. Lyon: Objected to as irrelevant and immaterial.

A. During the months of either September, October or November, in 1916.

Q. 25. I show you some photographs and will ask you if you recognize them.

Mr. Lyon: Objected to as having no foundation laid, and as leading and suggestive.

A. I have never seen these pictures before. I recognize Mr. George Everhardt in the uppermost, and the front view during construction, of the Majestic Theater.

[fol. 640] By Mr. Barton: It is noted that the photographs referred to are "Defendants' Exhibit 44, Photographs A, B, C, D, Majestic Theater."

Q. 26. I will ask you to state if you know what are the advantages or differences in the strength of concrete when placed by the old method by wheelbarrows or wagons, and when the mush is distributed to the forms by gravity.

Mr. Lyon: Objected to on the ground that it calls for expert testimony and defendants have not been granted leave to take expert testimony by deposition and on the further ground that no foundation is laid and as irrelevant and immaterial.

A. There is no recognized difference. The strength of concrete is determined theoretically by the proportions of cement and aggregates.

Mr. Barton: I will ask for a recess until 2 p. m.

Met pursuant to adjournment, same parties present.

By Mr. Barton:

Q. 27. You told me you wished to make some statement upon the record. You may go on and do it.

A. Well, I stated that we did not use gravity for placing concrete on the last building constructed, and I wish to correct that statement, as we did dump some concrete from receiving hopper at top of construction tower into chutes, allowing it to flow by gravity into place. In fact, we have dumped concrete from wheelbarrows or carts into chutes or spouts at times during the construction of every building that I ever worked on where concrete was used at all. I do not mean to imply that we used the so-called gravity system; only that we used some form of chute to guide concrete into the forms. I wish further to state that I have been en-[fol. 641] gaged on construction work in one capacity or another, either as water-boy, carpenter's helper, or journeyman carpenter since I was twelve years of age.

Witness dismissed.

Luther M. Hill.

SWAN P. JOHNSON, the next witness, having been duly sworn as a witness in behalf of defendants, testifies in response to questions of counsel as follows:

By Mr. Barton:

Q. 1. Please state your name, age, residence and occupation.

A. Swan P. Johnson; 51 years; 243 West 57th Street; put me down as a carpenter, a general superintendent.

Q. 2. State whether or not you have been associated with Hugh W. Bryson and Theodore Emtman in any construction work.

A. I worked for Mr. Bryson for the F. O. Engstrum Company, with Mr. Bryson as general superintendent for practically fourteen years, and as partner with Theodore Emtman for about a year and a half.

Q. 3. At the present time you are working independently, aren't you?

A. Yes, sir.

Q. 4. And you have been for about three years.

A. For about one year.

Q. 5. Do you remember the construction of a building known as the Majestic Theater Building in Los Angeles?

A. I do.

Q. 6. Were you in charge of that construction?

A. No, sir.

Q. 7. Do you remember the construction of the Wright-Callender Building, Fourth and Hill Street?

A. I—some of it when it was first beginning, yes.

[fol. 642] Q. 8. Who had charge of that construction?

A. I don't know.

Q. 9. To refresh your recollection I will ask if you know of the Kubach Company.

A. Not personally.

Q. 10. State if you remember how the concrete was placed in the construction of the Wright-Callender Building.

Mr. Lyon: Objected to as irrelevant and immaterial and not competent; no foundation laid and not rebuttal.

A. I can answer the question, can I? So far as my recollection goes, I saw a mixer standing on the hill, and concrete running down by gravity.

Q. 11. About what time was that?

A. I couldn't recollect the year.

Q. 12. Was it before or after the construction of the Majestic Theater Building?

A. I couldn't say, to be positive.

Q. 13. State if you had to do with the construction of the building in San Diego known as the Timken Building.

A. I had charge of the inside finish.

Q. 13. And about what time was that?

A. It was in the winter, but I don't remember the year.

Q. 14. About how long after that building was started was it before you went there to finish it?

Mr. Lyon: Objected to as incompetent, no foundation laid. It is not shown that the witness has any knowledge of when the building was started.

A. Three or four months.

Q. 15. Do you remember any accident to the apparatus while you were there?

[fol. 643] Mr. Lyon: Objected to as leading and suggestive, irrelevant and immaterial.

A. There was no accident on my part while I was there.

Q. 16. Do you recall that there was a windstorm and that apparatus was blown down?

Mr. Lyon: Objected to as leading and suggestive.

A. Why, I seen the place where it had fell through the roof of an adjoining building. That's all I know about it.

Q. 17. State whether or not you visited the Majestic Theater Building while it was under construction with Mr. F. O. Engstrum.

Mr. Lyon: Objected to as leading.

A. I visited that building about three or four times during the beginning of it and I ran across Mr. Engstrum one Saturday night at the building.

Q. 18. And do you remember what he told you at that time?

A. Well, he was mad, because he said the boys were using too much lumber building towers and trestles for running concrete there.

Q. 19. What were the trestles for?

A. Some were to support the pipes in certain places.

Q. 20. Now, will you state what the construction is above the auditorium of the theater—the roof?

A. It has a heavy girder to carry the ceiling of the auditorium, the ceiling of the dome, rather. It has a dome inside.

Q. 21. What is the shape of the dome?

A. Well, I would call it egg-shaped.

Q. 22. And when you and Engstrum were there, what, if anything, did you see in the way of shoring or supports for this dome? [fol. 644] A. Why, the beams were supported with timbers, as we always do in heavy constructions.

Q. 23. You are now in the concrete construction business, are you?

A. To a certain extent, yes.

Q. 24. And how do you distribute the concrete?

A. With wheelbarrows, carts, whichever is handiest.

Mr. Lyon: No cross-examination.

[fol. 645] IN THE DISTRICT COURT OF THE UNITED STATES, EASTERN DISTRICT OF PENNSYLVANIA

In Equity. No. 2067

CONCRETE APPLIANCES COMPANY, a Corporation, and WILLIAM H. INSLEY, Plaintiffs,

vs.

JOHN E. GOMERY, JOHN C. SCHWARZ, MICHAEL J. O'MEARA, and CONCRETE CONSTRUCTION COMPANY, Defendants

Met pursuant to the annexed notice at the office of Messrs. Pillsbury, Madison & Sutro, Standard Oil Building, San Francisco, California, May 26th, 1921, before Frank L. Owen, notary public in and for the City and County of San Francisco, State of California.

Present: George P. Barton, Esq., of counsel for defendants; Frederick S. Lyon, Esq., of counsel for complainants.

CHARLES C. HORTON, being first duly sworn according to law as a witness on behalf of defendants, testified as follows:

Direct examination by Mr. Barton:

Q. 1. Please state your name, age, residence and occupation.

A. Charles C. Horton; age 44; residence, 601 14th Avenue, San Francisco; occupation, contractor, more particularly vice president of the Healy Tibbetts Construction Company.

Q. 2. About how long have you been connected with the Healy Tibbetts Construction Company?

[fol. 646] A. Since 1892.

Q. 3. Please state the general nature of the work done by your Company?

A. Wharf and dock construction, bridges and general heavy construction.

Q. 4. Please state whether that work involves the placing of concrete?

A. We place a great deal of concrete in connection with contracts.

Q. 5. State, if you remember, what work, if any, you had going on at the time of the earthquake and fire at San Francisco?

A. We were just finishing the construction of piers 42 and 44 on the San Francisco water front at the time of the earthquake on April 18th, 1906.

Q. 6. Will you state the magnitude of that work in a general way?

A. The contract price on the two piers was about \$300,000. The work consisted of two concrete piers, supported on concrete cylinders ranging in length from 50 to 80 feet, 3 to 5 feet in diameter. On top of these cylinders was constructed a reinforced concrete deck. The superstructure was of wood.

Q. 7. State approximately how long and how wide was each of these piers?

A. The piers were about 650 feet long by 120 feet wide.

Q. 8. State whether the piers are now in use?

A. The piers are still in use, but have been more or less reconstructed.

Q. 9. State the location, if you will?

A. These piers are on the southern part of the San Francisco water front at the foot of Second Street.

Q. 10. State if you recall how these piers were utilized immediately after the earthquake and fire.

[fol. 647] A. Do you mean who occupied them?

Q. 11. Yes.

A. They were used by the Southern Pacific Railway immediately after the earthquake for storage purposes.

Q. 12. Were they—

A. Just a moment, Mr. Barton. I made a mistake when I stated that the decks were entirely of reinforced concrete. Steel beams were used in part of the construction in conjunction with wood stringers and concrete.

Q. 13. State whether those piers were used immediately after the earthquake and fire for those who had been driven out of house and home.

Mr. Lyon: Objected to as irrelevant, immaterial and incompetent.

A. The only knowledge I have of the use of the piers is that we arranged through the president of the Board of Harbor Commissioners to permit the Railroad Company to use them before the final acceptance. This, of course, included the dockage of vessels and the storage of freight under the sheds.

Q. 13a. You may state if you know how the concrete for those cylinders was placed, what appliances did you use in that connection; and state further, if you know, where any of such appliances, if any, may be found now.

A. The most of the concrete was poured in position from a floating barge. The ruins of what is left of this barge can now be seen in our Company's boom just west of the Western Pacific Railway Company's ferry slip at the foot of 25th Street, San Francisco. This barge consisted of a material bunker, into which the concrete aggregates were placed by means of a grab bucket operated from a floating derrick barge alongside. The materials were also stored on other barges within reach of the boom of the derrick barge. When [fol. 648] the aggregates were placed in the bunker on board the mixing barge they run by gravity to the concrete mixer. When thoroughly mixed they were dumped into a skip which was hoisted in a wooden tower about 60 feet in height and there dumped into a hopper at the top of the tower. This hopper was operated by a man from an elevated platform just above the level of the hopper described above. This hopper had an adjustable opening and when it was desired to place the concrete in one of the cylinders a signal was given to the operator at the top of the tower and he opened the gate and permitted the concrete to run to the cylinders through a trough. This trough was held in suspension by means of a pivoted boom attached to the tower of the mixing barge. I think that completes the pouring of the concrete.

Q. 14. How recently have you seen that barge?

A. This morning.

Q. 15. You have spoken of a trough for carrying the concrete; will you describe that more in detail?

A. This is a metal half-circular trough built of sheet iron and reinforcing angles along the edge in sections about $2\frac{1}{2}$ or 3 feet long, the various sections being held together by hooks and chains.

Q. 16. State if you recall just how the different sections articulated with each other, if at all?

A. They were suspended and held in position by guys from boom so as to afford a flexible pipe through which the concrete could easily run.

Q. 17. What was the purpose, if any, of having the pipe flexible?

A. So that its angle could be changed affording little trouble in moving it from one cylinder to another.

Q. 18. State whether it could be moved so as to reach different cylinders without moving the barge?

[fol. 649] Mr. Lyon: Objected to as leading and suggestive.

A. The boom that suspended the trough was a pivoted boom giving free movement up and down and also sideways. This permitted us to adjust the position of the trough at any angle either vertical or horizontal.

Q. 19. Describe what the connection was between this chute and the hopper you have described as being up in the tower?

A. That was a loose joint connection as I recall it, so as to permit the chute to swing and change its angle from that point.

Q. 20. Will you describe just how the boom from which the chute was supported was connected with the tower? What kind of a joint or connection?

A. I can't give you the details of this connection. All I can say is that it permitted the boom to operate both horizontally and vertically. This equipment was constructed 15 years ago and has long since been abandoned and it is difficult to remember just what the exact detail was. However, our construction superintendent is available and he can probably give you this information, as he was in charge of the construction of these piers at that time. His name is Mr. Martin E. Brown.

Q. 21. You have mentioned a platform on which a man stood who I understand opened a gate on signal. How was that platform placed in altitude with respect to the hopper?

A. That platform is still on the wrecked barge and can be seen. My recollection is that it was just at the top of the hopper.

Q. 22. I wish you would describe more in detail what the condition of that apparatus is as you saw it this morning.

A. The hull of the barge is intact, the tower that once stood vertically has been cut away from the deck and thrown over; the original hopper into which the concrete was dumped near the top of the tower is still in the wrecked portion of the tower; the gate from this hopper to the chute is still available, and is in its original condition in reference to the hopper. The first length of the trough which was directly connected below the gate described above is lying on the premises near the barge, on the shore.

Q. 23. Describe that piece or part that is lying on the shore.

A. It is a metal circular troughed end, gradually diminishing in diameter so as to fit the trough itself.

Q. 24. Do you recall how many standards or posts were used to support the tower?

A. There were six vertical posts with two batter braces, all of which can still be seen.

Q. 25. What is the material of the tower?

A. Oregon pine lumber.

Q. 26. Now, as I understand you, there was a suitably supported horizontally movable boom connected with the tower?

A. There was.

Mr. Lyon: That is objected to as leading.

Q. 27. And you may state whether or not there was a chute or conduit carried by the boom.

Mr. Lyon: Objected to as leading.

A. The concrete trough that I have previously testified to was used as a chute or trough.

Q. 28. And state whether or not that trough was carried by the boom.

Mr. Lyon: Objected to as leading.

Q. 29. Or how was it connected with it?

A. It was suspended from the boom by means of ropes and cables. [fol. 651] Q. 30. What means, if any, were there in that apparatus for raising plastic material to a suitable point in the height of the tower?

A. You mean the mixed concrete?

Q. 31. Yes.

A. I have already testified that the mixture discharged into a skip which was hoisted to the top of the tower by a steam donkey engine aboard the barge.

Q. 32. And what means if any did you have for receiving the plastic material from that skip?

A. It was dumped into the hopper at the top of the tower.

Q. 33. And how if in any way was the plastic material or mush gotten into the chute or conduit?

A. Through a gate operated from platform near top of tower, and it run through the trough by gravity.

Q. 34. You have said that the boom was connected to the tower; what, if any, means was employed or supplied by which the boom might be connected at different points in the height of the tower?

Mr. Lyon: That is objected to as leading and suggestive and assuming facts not testified to by the witness.

A. I cannot describe the detail of this connection; all I know is that the connection between the boom and the tower was such that it was adjustable up and down the tower to suit the particular work being done at different times.

Mr. Lyon: The answer is further objected to as incompetent, a conclusion of the witness, and not a statement of facts, and not responsive to the question, and as incompetent.

Q. 35. You have stated that this barge with apparatus for placing concrete was used in the construction of piers 42 and 44 before the earthquake. About how long before the earthquake, if you know, was that apparatus installed?

A. It required about a year to put the concrete in the cylinders of these piers, so that this barge must have been built from 12 to 15 months previous to April, 1906.

Q. 36. And what if anything was done with this barge and the apparatus after April, 1906, until it was abandoned?

A. We used it at various times for the next four or five years on other dock construction on the water front of San Francisco.

Q. 37. In my notice I gave the name of W. H. Healy. State if you know him and where he is now, if you know, and when you may expect he will return to San Francisco, if he is away.

A. Mr. W. H. Healy is the president of our company, is at the present time sick with sciatica at Byron Hot Springs, and will probably not return to business from two to three weeks from this time.

Q. 38. You may state if you know whether he was familiar with this apparatus for placing concrete?

A. Mr. Healy was familiar with this apparatus and saw it in operation.

Mr. Barton: Direct examination closed.

Cross-examination by Mr. Lyon:

X Q. 1. Has the Healy Tibbetts Construction Company been engaged in building any reinforced concrete buildings in San Francisco since April, 1906?

A. Yes.

X Q. 2. Oh, approximately how many and what was their general character?

A. I would say we built about 20 reinforced concrete buildings; [fol. 653] some were office buildings and others were industrial plants.

X Q. 3. On those buildings you used the wheelbarrow method of distribution of concrete, did you?

A. I could say we did in most cases, yes.

X Q. 4. When you say in most cases, please describe more fully what you mean.

A. In placing concrete in a building you use a tower and hoist the material by means of a skip to various elevations required and then dump it into a hopper. If it is to be used within limits, so that gravity distribution is advisable, we often install a temporary wooden trough from the hopper and distribute it by this means in place of barrows.

X Q. 5. That would be a straight trough from the hopper to the point to which you delivered the concrete; is that right?

A. That is a trough supported from the floor of the structure by means of wooden supports.

X Q. 6. If I understand you correctly, this old barge and apparatus which you say you again inspected this morning previous to testifying, does not now contain the boom itself, does it?

A. No, sir; it does not.

X Q. 7. When was it dismantled?

A. Now, I don't think we used it for the last eight or ten years.

X Q. 8. According to your best recollection, when and on what job did you last use it?

A. I can't recall the particular job; we have built 15 or 20 piers

on this waterfront, and it was those immediately following the construction of piers 42 and 44 on which it was used. I will add that those piers were adjoining piers 42 and 44 and were probably 36 and 38.

X Q. 9. You don't remember when those were built?
 [fol. 654] A. They were built from 1907 or '08 up to 1911, I should think.

X Q. 10. You know what became of the boom that was on this barge in 1906?

A. I do not.

X Q. 11. Can you state whether it was removed from that barge? I want a definite statement, Mr. Horton, not a guess. If you cannot remember definitely, please state so.

Mr. Barton: Just a moment. It is suggested to the witness that he has control of the form of his own answers.

A. It was removed. Do you want me to tell you why?

X Q. 12. I asked you when?

A. As soon as the work on which it was used was finished.

X Q. 13. And you can't give the date?

A. Too long ago for me to remember any dates.

X Q. 14. How was the concrete handled for the decks on piers 42 and 44?

A. There was very little concrete in the decks of those piers.

X Q. 15. And how was what concrete there was in those decks handled and distributed?

A. I don't recall. This outfit was principally for depositing the concrete in the cylinders.

X Q. 16. In the cylinders?

A. Yes.

X Q. 17. So far as your recollection goes, it does not enable you to state that what concrete was used on the deck was distributed by this tower and boom method, does it?

A. My answer to that would be that I can't recall where any concrete was used on the deck other than along the waterfront line, where a permanent wall was built. If you recall, you will remem-[fol. 655] ber I corrected myself on that.

X Q. 18. Then your present recollection is that the decks of piers 42 and 44 were not of concrete?

A. My present recollection is that the decks are supported by steel beams on top of the cylinders and wooden joists and wooden planking above.

Mr. Lyon: That is all.

Mr. Barton: No redirect.

Chas. C. Horton.

An adjournment was here taken until 2 p. m.

Met pursuant to adjournment. Same counsel present.

The witness CHARLES C. HORTON, being recalled on the part of the defendants, testified in response to questions as follows to-wit:

By Mr. Barton:

Q. 39. I will ask you, since you have closed your deposition, if you have had a sketch or drawing made?

A. We have.

Q. 40. Is this which I hold in my hand and which I hand you the sketch or drawing in question?

A. It is.

Q. 41. Please state how the apparatus illustrated in the sketch compares with or differs from the apparatus which you described in your previous deposition as used in connection with placing concrete, and in this connection you may make any correction that you may wish to make in your previous deposition?

Mr. Lyon: Objected to as leading and suggestive and incompetent, no foundation laid, not the best evidence, calling for the mere con-[fol. 656] clusion of the witness and not for a statement of facts, and not a proper method of proof.

A. The sketch referred to is a reproduction of the barge used by the Healy Tibbets Construction Company during 1905 and 1906 in mixing and pouring concrete in the construction of piers 42 and 44 on the waterfront of San Francisco. In connection with my previous testimony I find in discussing the matter with Mr. Brown, our superintendent—

Mr. Lyon: We object to any statement of any conversation had by the witness with others, since leaving the stand today, or at any other time, on the ground that the same is incompetent, not being shown that such conversation is in any manner binding upon the plaintiffs, nor was any representative of the plaintiffs present.

Witness (continuing): That the trough used was a full circular pipe and not a trough, as previously stated.

Q. 42. Will you point out on the drawing if it appears there the illustration of the pipe or chute in question?

Mr. Lyon: Same objection as last noted on the record.

A. This is the pipe referred to (witness runs his finger along the structure over which appears the words "Flexible joints held together by chains").

Mr. Barton: That is all.

Cross-examination by Mr. Lyon:

X Q. 43. Since leaving the witness stand this noon, with whom besides your superintendent, Mr. Brown, have you discussed this matter?

A. Our engineer, who prepared this drawing, and Mr. Barton.

X Q. 44. You did not make the drawing that you have produced, did you?

[fol. 657] A. Made under my supervision with Mr. Brown.

X Q. 45. Did you give to such engineer the details for this drawing?

A. Just what details do you refer to?

X Q. 46. Any of them.

A. Some of them.

X Q. 47. Which ones?

A. The general detail of the tower, mixer, location of engine, boom and pipe. I am capable of giving this detail by reason of my examination about it this morning.

X Q. 48. Do you know who gave such engineer or draftsman the details of construction which are shown on this sketch?

A. Mr. Brown.

X Q. 49. Were you present and discussed the matter with him at the time?

A. Part of the time.

X Q. 50. Was that before you went on the stand this morning?

A. Both before and since.

Mr. Lyon: That is all.

Chas. C. Horton.

MARTIN E. BROWN, called as a witness on behalf of defendants, being first duly sworn according to law, testifies as follows:

Direct examination by Mr. Barton:

Q. 1. Please state your name, age, residence and occupation.

A. Martin E. Brown, 320 Edinburgh Street, San Francisco, California; superintendent of construction for Healy Tibbets Construction Company, San Francisco.

Q. 2. How long have you been in the service of that company?

[fol. 658] A. Twenty years or more.

Q. 3. State in a general way the character of your work or duties.

A. My duties consisted in directing the men in the construction of equipment for the lines of pile driving, bridge building, wharf work and the like.

Q. 4. State what your immediate employment was if you remember in the year 1905, and up to the time of the earthquake.

A. Superintendent of construction for the Healy Tibbets Company.

Q. 5. What particular work did you have under way at that time?

A. We had under construction at that time the building of new piers 42 and 44 on the waterfront of San Francisco.

Q. 6. And who was in immediate charge of that work?

A. I was in immediate charge of that work as overseer.

Q. 7. Will you state in a general way how large those piers are and also state how they were constructed?

A. The piers in size were about 200 feet wide and 600 feet long from the bulkhead line to the end of pier. The construction consisted of the placing for foundation, large wooden cylinders 4 to 6 feet in diameter, and from 60 to 80 feet long. These cylinders had to be erected on the dock, placed with a pile-driving equipment, driven to firm foundation, and thoroughly cleaned out to receive the concrete needed for supports for the dock proper. After removal of all earth from the inside of cylinders the concrete barge equipment for the placing of concrete in cylinders was brought alongside. The concrete was placed in mixer from bunker on barge that also contained the hoist and tower necessary for placing of the concrete. Where the cylinders in wharf were too far in from edge of dock to receive concrete directly from barge, a large circular trémie was used to reach to all cylinders inside of wharf. The concrete was hoisted to top of tower, let out in receiving box, then by opening a gate, concrete was allowed to run through the trémie into cylinders until they were filled to proper proportions. After the completion of cylinders the top work followed, and the balance of deck work was done from the top out of wooden construction.

Q. 8. At the time of the earthquake, how far had the work progressed on piers 42 and 44?

A. The work had progressed about two-thirds complete.

Q. 9. How many of those openings with the wooden curbs would you have at one time to be filled?

A. We would endeavor to have ready before starting to concrete with the trémie a full row or eight cylinders, and by the time that they were filled with concrete others would be ready.

Q. 10. How was the material brought to the barge?

A. The material was loaded from a bunker at our quarries, brought by barge to the site, and placed in bunker on mixing barge by means of derrick barge.

Q. 11. How was the material moved from the barges that brought the material to the bunkers of the barge that you had the tower on?

A. That I have just described was the mixer barge. When the materials were moved into the bunker of the mixing barge by a derrick barge alongside.

Q. 12. Were there separate compartments for the material in the mixing barge?

Mr. Lyon: That is objected to as leading.

A. The barge that held the batch for the mixer had separate compartments for rock, sand and gravel. This was placed in mixer by [fol. 660] gravity by releasing lever for each separate batch of concrete. The cement for this mix was placed on platform and handled by hand from the platform for each batch of concrete.

Q. 13. And where was the mixture or mush delivered from the mixer?

A. After the mix was thoroughly mixed the mixer deposited the same in receptacle and then was hoisted by tower into a receiving box and spilled through trémie pipe out over walk into cylinders.

Q. 14. The box or receptacle into which the mixture discharged, as I understand you, was down low at the foot of the tower; is that correct?

Mr. Lyon: Objected to as leading and suggestive.

A. The concrete bucket received the mix from mixer at the bottom of barge and was hoisted by cable to receiving box at head of hoist tower.

Q. 15. Where was the bucket placed while it was receiving the charge from the mixer?

A. The bucket was returned after unloading at an opening placed inside of barge below the mixer so as the mixer discharged directly into the receiving bucket.

Q. 16. What power was used to raise that bucket when filled with the mush?

A. The bucket was hoisted by means of steam power. The mixer was driven by steam power.

Q. 17. Where was the engine that raised the bucket placed?

A. The engine that raised the bucket was placed on the after end of the mixer barge.

Q. 18. Describe the construction of the tower.

A. The tower was constructed of materials from main supports of 6x8 and braced by 3x6 and 4x6 side and X bracing. Inside of tower liners were placed of hardwood so as to guide the concrete bucket that was hoisted to the top of tower. At the head of tower a large cast-[fol. 661] iron sheave was used for rudder for mixer bucket. On the outside of concrete hoist tower was used of boom to take care of trémie that was used to place concrete in cylinders. This boom could be used at any angle found necessary in the moving of trémie from cylinders to cylinders, and the bringing out of cylinders to the pipe as the cylinder was completed, and for any light lumber work such as was found necessary in the construction of wharf.

Q. 19. You spoke of hardwood lining or facing; how many such ways were there in the tower?

A. The inside liners or guides for the concrete bucket, there were four liners used, one in each corner of the square tower, to guide the bucket along.

Q. 20. State whether or not you greased those ways.

Mr. Lyon: Objected to as leading.

A. It was necessary to grease the rollers on hoist but not the ways.

Q. 21. How many upright standards or poles were included in the tower?

A. The tower frame consisted of four upright stanchions, and were braced on the outside by four braces to support the box that received the batch of concrete at head of tower; there were two 2 x 6 straight supports cross-braced.

Q. 22. Who built that apparatus, if you know?

A. I cannot remember the names of the men that did the actual work, but I superintended the construction of same.

Q. 23. Do you remember the names of any of the men?

A. Well, Mr. Ayer, the man that I have with me—Fred Ayer. It is so long ago that it would be hard for me to think of the names.

Q. 24. What was the height of that tower?

[fol. 662] A. The height of the tower as near as I can recollect was 50 feet.

Q. 25. When did you see it last?

A. I looked at what was left of it this morning.

Q. 26. Who were present this morning?

A. In the presence of Mr. Horton and Mr. Barton.

Q. 27. Was Mr. Fred Ayer there?

Mr. Lyon: Objected to as leading and suggestive.

A. Mr. Fred Ayer was not there at the time I was there.

Q. 28. Describe more in detail the trémie, its construction, as it was used in the year 1905-1906.

A. As we used the trémie it was made of light iron reinforced for holding the sections which were 5 foot in length, and also some half sections to move in any angle or direction we wanted with short or long length as required to make handling easy. The sections could be telescoped and easily fastened together with small chains which were dropped over hooks on the ends of each section of pipe. In some cases where a concrete deck was necessary this trémie pipe was moved from 70 to 80 feet over face of dock to allow concrete to be placed in any difficult corner that may come up during the course of construction, and we found this trémie pipe construction the easiest method of doing our work, and used it whenever we could find occasion to do so.

Q. 29. In moving it over 70 or 80 feet, as you have mentioned, how was the change or changes brought about; just how did you do that?

A. Where the pouring of concrete necessitated the pouring of concrete over a distance of 70 or 80 feet the trémie pipe was handled by outrigger boom that was fastened to the concrete hoist and secured by bolts. This boom could be raised, lowered, or swung to [fol. 663] whatever angle found necessary by the raising and lowering of live boom.

Q. 30. You have stated, I think, that the piers were about 200 feet wide each; just where would you place the mixer barge with reference to the work you did near the center line of the pier?

A. We worked from one side of pier as far as we could work to advantage with trémie pipe and after going as far as we could in that manner the floating equipment all intact was moved around to the opposite side of dock and work concluded from the other side, that could not be completed from the first operation.

Q. 31. And how far in the length of the pier could you distribute the concrete without changing the position of the barge?

A. It would go any length that you cared to go according to the length of tower required to give you fall with your trémie pipe; in other words, the higher the tower, the more you could reach with trémie pipe, but with this particular rig that was in use at piers

42 and 44, 70 to 80 feet was about all we could work to good advantage.

Q. 32. How was the mush transferred from the hopper to the trémie pipe?

A. After the concrete bucket brought the mixed material to the top of hoist and placed in receiving barge, trémie was placed directly underneath receiving box and by the opening of a gate which was held by a lever the mixed materials would run directly into trémie pipe and be deposited where found necessary.

Q. 33. What kind of a gate was this?

A. The gate was made of sheet iron with a cast-iron face. It had a sliding movable part that was easily opened or closed at the will of the man operating it, by means of a lever handle.

[fol. 664] Q. 34. Where is that gate now?

A. The gate is now on the abandoned tower that was used at that time at our storage yard in South San Francisco.

Q. 35. When did you see the gate last?

A. I saw the gate last this morning.

Q. 36. Did you point it out to me?

Mr. Lyon: Objected to as leading and suggestive, and immaterial and incompetent, not being shown that any one was present at the time appointed.

A. I pointed out the gate to Mr. Barton.

Mr. Barton: Last evening I gave Mr. Lyon written notice of the two additional witnesses, Mr. Brown now on the stand and Mr. Ayer, who has been already sworn in this case, and in connection with my notice I stated that the barge was in existence and that this morning at low tide would be a good time to see it. Mr Lyon was reported as not in his room when I left the notice. I, however, gave my address as at the Clift Hotel.

I now renew the offer to show the barge to Mr. Lyon or to any expert; its location already appears from the depositions that have been taken. It is a matter of about twenty minutes' ride on the street car and a walk of, I would say, near quarter of a mile from the end of the street car line. We saw it at low tide.

Mr. Lyon: The statements of Mr. Barton are objected to as not evidence, and as incompetent. Plaintiffs demand that the best evidence be produced. If counsel for defendants wishes to rely upon merely oral testimony he does so at his own risk. I may avail myself of an opportunity to inspect the alleged barge hereafter, [fol. 665] but such inspection or offer to inspect must not be taken as any excuse for failing to produce record and physical evidence in the case. In regard to the note which you left at my hotel last evening you stated: "The barge is still in existence, and I offer to show it to you or any expert you may wish to examine it." What barge you referred to I had no knowledge of, and while you stated that low tide 8 o'clock this morning would be best time, I heard nothing further from you, although I did not leave the hotel until half past nine. However, plaintiffs shall insist that the best evidence be produced.

Mr. Barton: In explanation of my use of the word "barge" only, I will say that I telephoned to Mr. Lyon before we left Los Angeles that the San Francisco testimony would relate to the use of the invention on a barge about the time of the earthquake. I thought no further elucidation by words would be necessary.

Q. 37. State if you know what had become of the sections of the trémie; where are they now?

A. The sections of the trémie as near as I can recall have been used beyond repair, and we still have on hand in our storeyard some old sections of pipe that I believe were used on this same barge at the time we were doing the work at piers 42 and 44.

Q. 38. The particular section that was next to the gate; where is that, if you know?

A. One old section known as the head section of trémie is still on the rig at our Potero boom. The mixer box and the barge that hoists was constructed on are also at our Potero boom.

Q. 39. You may state whether or not there is a piece or section of the trémie upon the bank of the slip near the barge?

Mr. Lyon: Objected to as leading

[fol. 666] A. The piece or section of trémie that was used near the barge I had taken off of barge and placed on bank at the orders of Mr. Barton.

Q. 40. When was that?

A. That piece of pipe was taken from barge yesterday afternoon or Wednesday afternoon, May 25th.

Q. 41. And can you state whether that was one of the original pieces or sections of the trémie?

Mr. Lyon: Objected to as leading and suggestive, incompetent; no foundation laid.

A. That section or piece of trémie was used in connection with piers 42, 44, and other docks in the near vicinity, as near as I can recall.

Q. 42. Please describe that piece or section, if you can.

Mr. Lyon: Objected to as incompetent, not the best evidence, no foundation laid for the introduction of secondary evidence, and it is not identified.

A. The section of pipe used at the head of hoist would not receive as much wear and tear as sections further down the line, but from the position of the present piece of pipe, in my judgment, it had had quite a bit of wear, as near as I can remember.

Q. 43. State the shape of it and whether or not any portion has been broken off and is not there.

Mr. Lyon: Some objection, incompetent.

A. The piece as now is has deteriorated and rusted away from lying for years in the open. As for it being broken by other means

outside of the evidence I cannot state, as anything of this kind has taken place; simply worn out from old age. The connecting straps which were heavier than the circular trémie pipe itself are still in good condition.

Q. 44. You have stated that you used this mixing barge with the [fol. 667] tower and other parts in the construction of piers 42 and 44. You may state whether or not that same barge and apparatus were used subsequently, and if so, when and to what extent?

A. The same mixer barge, tower, bunker and complete apparatus used by steam power was used at piers 42 and 44 until work was completed. Then after a short space of time when it was stored it was again taken out for use in the construction of piers 36 and 38, which were of concrete cylinder construction similar to piers 42 and 44. This same tower rig was used about a year's time in the construction of each pier.

Q. 45. And about what time was it moved to the place where we saw it this morning?

A. I cannot positively state when it was moved to where you found it this morning, but it was after, as I stated previously, the completion of piers 36 and 38, which was four or five years after that time, after the work that was done at piers 42 and 44, and that work was being done in the years 1905 and 1906.

Q. 46. You may state whether you have used other similar apparatus since that time.

Mr. Lyon: That is objected to as leading and suggestive, incompetent, no foundation laid, not the best evidence, calling for the conclusion of the witness, not the proper method of proof.

A. We have used from the time of retiring this rig in question similar rigs and have now on hand rigs constructed almost alike at our plant to be seen if found necessary at Sheep Island on San Francisco Bay.

Q. 47. Reference has been made to a boom which was attached to the tower to support and control the trémie pipe. Will you state just how that boom was fastened or secured to the tower?

[fol. 668] Mr. Lyon: Objected to as leading and suggestive, as incompetent, not the best evidence, no foundation laid for the introduction of secondary evidence.

A. The boom was fastened to main tower by timber of size of about 8 x 8, bolted to sides of tower and could be raised or lowered at the discretion of the man in charge when found he could work at a higher or lower level to suit his conditions under which he was working. The boom proper was ironed off with bolts and lead bars so as it could be easily taken out and placed up or down hoist as found necessary by the simple letting go of a few bolts. Steam was furnished from the main boiler and lines were run directly from tower to boom to drums of engine by lead bars.

Q. 48. You were present, were you not, when Mr. Horton gave his deposition this morning—this afternoon, on being recalled?

A. Yes, sir.

Q. 49. I show you a drawing or sketch and will ask you to state if you know what it is?

Mr. Lyon: Objected to as leading and suggestive, and as incompetent; no foundation laid, and not the best evidence.

A. The drawing I recognize as a sketch similar to the method of the one used in the construction of the concrete cylinders in the docks piers 42 and 44.

Q. 50. You may state whether or not this is the drawing or sketch that was referred to by Mr. Horton in his deposition.

Mr. Lyon: Objected to as leading.

A. This is the drawing referred to by Mr. Horton.

Q. 51. You may state, if you know, who prepared the drawing and also if you know under whose direction it was prepared.

[fol. 669] A. The drawing was prepared by Mr. List, draftsman in the employ of the Healy Tibbets Construction Company, and under the direction of Mr. Horton and Mr. Brown.

Q. 52. Will you go on and describe again the apparatus and system of concrete distribution as it was used in the construction of piers 42 and 44, and in the construction of subsequent work, making reference in your description to this drawing which is before you as you may have occasion?

Mr. Lyon: Objected to as leading and suggestive, and as incompetent; no foundation laid, and as not the best evidence.

A. In explaining the operation of the method used with the floating tower barge with bunker and tower equipped rig, will state that we found this method of operation the best that we had found in any of our work up to that time, and we also used the same method to good success on piers 36 and 38.

Q. 53. I will ask you to refer to the drawing and point out in the drawing what the different figures and illustrations represent, if anything, with relation to the apparatus you have referred to as used in the years 1905 and 1906 and subsequently?

Mr. Lyon: Objected to as leading and suggestive, and as incompetent, no foundation laid, and as not the best evidence, not a proper method of proof.

A. In the working of the tower barge the drawing showing the concrete hoist and the mixer barge, box and retainer when hoisted, the trémie supported by movable boom, also the bunker, mixer and power hoist for handling the trémie and concrete material. The section XX shows support for movable boom, with the bolts can be moved up of our work up to that time, and we also used the same method to [fol. 670] bucket showing at lower end of hoist in place ready to receive mix from mixer. Bunker shown above mixed that deposits batch into mixer. Boiler that furnishes steam for engine that runs mixer, and spools and cables and blocks shown in the handling of boom and trème pipe. Section showing boom, irons and fasteners are also at

upper end of drawing. That is all there is to describe, as near as I know.

Q. 54. What is the size of the barge, about?

A. The barge is about 24 x 50, and about 6 feet deep.

Q. 55. I notice in the drawing is the marking in the general figure "Barge Hull 20' x 50'"; have you measured the barge—

Mr. Lyon: This is objected to as leading and suggestive and upon the grounds stated in the objection to Q. 53.

A. I simply stepped off the barge, but took no exact measurements, as the barge was in a bad state from slime and muck and I did not care to get any more on my person than I could help.

Q. 56. And by pacing it—

A. As near as I could recall it was about 20 x 50.

Q. 57. There is a figure marked "Boiler & Engine" in the general view. I understand you to say that this is approximately the location of the boiler and engine as you used it upon the barge.

Mr. Lyon: Same objection as made to the preceding question.

A. As near as I can recall that is about the location of the boiler and engine as when used.

Q. 58. There is a square marked "Bunker" and below it in an oblong figure appears the word "Mixer." I understand from your testimony that the location of the bunker on the barge as used by you was in the position indicated by the word "Bunker" and that the "Mixer" was below it as indicated in the sketch; is this correct?

[fol. 671] Mr. Lyon: Same objection as made to Q. 55.

A. As near as I can recall the bunker as outlined, also mixer, is in the location as when the rig was in operation.

Q. 59. You may state what the central portion of the figure represents.

Mr. Lyon: Same objection as noted to Q. 55.

A. The central figure is the hoist proper, the sheave at the head of the hoist is the lead for the concrete bucket to bring the concrete to the head of the hoist to retain box to be placed through trémie.

Q. 60. How is the trémie illustrated, if at all, in the figure?

Mr. Lyon: Same objection as noted to Q. 55.

A. The trémie held under the retainer box, the lever showing where the gate opens and deposits the concrete in the trémie pipe, and the boom shows on hoist holding trémie pipe in whatever location found necessary.

Q. 61. State whether the different parts illustrated in the drawing represent the apparatus which you actually had in use.

Mr. Lyon: Same objection as noted to Q. 55.

A. The drawing as I see it before me is as near as I can recall a likeness of barge, hoist and boom operation as was used in the erection of the piers 42 and 44.

Q. 62. In the drawing is a figure or portion marked "Operating Platform." What is that figure or part designed to represent?

Mr. Lyon: Same objection.

A. The figure on drawing shows operating platform is the platform that is used for the man at the head of the hoist to trip concrete from hand lever into trémie pipe to be deposited where found necessary. [fol. 672] Q. 63. By "hoist," did you refer to the tower?

Mr. Lyon: Same objection.

A. By "hoist" I referred to the bucket brought by hoist to top of tower and depositing concrete in retainer box.

Q. 64. Is the operating platform still in existence that you used upon the tower?

Mr. Lyon: Same objection.

A. What is left of the concrete platform that was used at the head of the hoist still remains with the wrecked concrete tower at our boom in South San Francisco.

Q. 65. Referring to the drawing, will you point out the portion that illustrates the tower?

Mr. Lyon: Same objection as noted to Q. 55.

A. The portion illustrating the tower is the up and down support, showing the X bracing and platform at head of hoist, also sheave for hoisting concrete bucket.

Q. 66. Will you point out in the drawing the boom?

Mr. Lyon: Same objection.

A. The boom as shown on the drawing leading directly out supported by a line and block leading to the head of the tower, then down the back end of the tower directly into the spool of the hoisting engine.

Q. 67. What is it that is illustrated in the drawing that permits the mush or concrete to flow through it by gravity?

Mr. Lyon: Same objection.

A. The cut shows the concrete retainer box and below the trémie pipe being supported by the boom, the pipe being flexible and by the operation of the boom either up and down to make the flow easy to its destination.

Q. 68. Is this conduit which is marked "Slip joint pipe or trémie" illustrated as made in sections?

[fol. 673] Mr. Lyon: Same objection.

A. Yes, it is.

Q. 69. And how are the different sections held together and at the same time made flexible?

Mr. Lyon: Same objection.

A. Each joint as shown on drawing is telescoped by following joints, and are held together by hooks fastened to each section in a way to permit small chains to be placed over hooks to make tight connections, and so on down the line, each joint having an overlap of about 6 inches.

Q. 70. And about how long was the conduit or trémie in the apparatus that you used in building those piers?

Mr. Lyon: Same objection.

A. The trémie used in the operation of those piers was in the neighborhood of 80 feet long, as each section had to go within four or five feet of bottom of cylinders. Cylinders ranged in these piers from 60 to 80 feet long.

Q. 71. Just what means is illustrated in this drawing for receiving the plastic material or mush after the mush has been raised?

Mr. Lyon: Same objection.

A. The receiving box just under the platform where trémie is fastened, as noted hopper at head of hoist.

Q. 72. You have on the drawing the words "Valve Operated from Platform with Lever;" does that indicate the position of the valve of gate by which the mush was let into the chute or conduit, otherwise the trémie?

Mr. Lyon: Same objection, and the further objection as noted that the question assumes that the witness had something to do with the imprinting of the alleged words upon this drawing. Such assumption is not borne out by any testimony of the witness, and there [fol. 674] is no foundation whatsoever for assuming that the witness put the *legions* or words upon this drawing.

A. The words "Valve Operated from Platform with Lever" indicates the valve handler or concrete hopper gate that is moved by either handle to allow concrete from retainer box to pass through trémie to whatever place may be necessary.

Q. 73. Was that a sliding or pivoting gate or otherwise?

Mr. Lyon: Same objection.

A. The gate for hopper is known as a sliding lever gate.

An adjournment was here taken until tomorrow, May 27, 1921, at 10 o'clock a. m.